

SECTION I -- INFORMATION

1.1 [EXECUTIVE SUMMARY LETTER - PROGRAM SOLICITATION (FEB 2000)]

May 11, 2000

TO: ALL PROSPECTIVE APPLICANTS

SUBJECT: Program Solicitation for Financial Assistance Applications for "Hybrid Power Systems," Program Solicitation Number DE-PS26-00NT40779

The purpose of this executive summary letter is to highlight some important elements of the Program Solicitation. This letter is not an integral part of the solicitation. The solicitation is a self-contained document. In the event of any conflict between the contents of this executive summary letter and the contents of the solicitation, the solicitation language will prevail.

This solicitation supports the Vision 21 program which focuses on systems that integrate multiple technologies in order to achieve step improvements in performance and cost. The objective of this effort is to aid the development of systems that will produce affordable, safe, environmentally-friendly electrical power with a goal of eventually being 75 percent efficient (lower heating value) from fossil fuels. The specific effort should focus on proof-of-concept systems of suppliers' market entry product. Proof-of-concept system is defined as the smallest system that will adequately test all of the individual components in a fully operating system. The system shall contain any combination of existing or "near-term" power industry fuel-to-electricity conversion equipment. Near-term means that the equipment will be sufficiently developed in time for proof-of-concept testing starting in the year 2003 or sooner. One of these components must be a high-temperature fuel cell.

The solicitation is divided into seven (7) sections as follows (The sample award document is contained in Sections I-IV):

Section I	Face Page (DOE F 4600.1)
Section II	Special Terms and Conditions
Section III	Intellectual Property Provisions
Section IV	List of Attachments Attachment A--Statement of Project Objectives Attachment B--Reporting Requirements Attachment C--Budget Page(s) Attachment D--Recipient Acquired Property
Section V	Conditions and Notices
Section VI	Application Preparation Instructions
Section VII	Evaluation and Selection
Section VIII	Intention To Propose Form
Section IX	References

Each application will be objectively reviewed on its own merit against the evaluation criteria stated in Section VII using technical, scientific and/or peer reviewers, some of whom may be non-Governmental personnel. Should an Applicant object to review of their application by individuals other than Government employees it shall so state in Volume I of its application. Applicants are, however, cautioned that the DOE may be unable to give full consideration to applications which indicate that only Government evaluation is authorized. Please be advised that a nondisclosure agreement will be signed by all Federal and non-Federal evaluators and advisors prior to DOE furnishing a copy of the application(s) to the evaluators and advisors, along with instructions on the proper care regarding the handling of the application(s).

Individuals, corporations, nonprofit organizations, small and small disadvantaged businesses, educational institutions, and state or local governments or other entities who wish to have an application evaluated should respond to the requirements of this solicitation.

Federal agencies and agents (i.e. Management and Operating (M&O) contractors and/or National Laboratories) are prohibited from submitting applications, as a prime contractor, under this solicitation. Applications which include performance, as a subcontractor by DOE M&O contractors and/or National Laboratories are

appropriate if the proposed use of any such entities is specifically authorized by the executive Federal agency managing the M&O or National Laboratory, and the work is not otherwise available from the private sector. If the Applicant proposes to use an M&O or National Laboratory, the application shall contain a letter from the executive Federal agency managing the M&O or National Laboratory authorizing the use of such entities, along with a statement as to why the work is not otherwise available from the private sector. Such work, if approved, would either be accomplished through a subcontract or through a direct transfer of funding from the NETL to the M&O contractor and/or National Laboratory. Even though participation of an M&O and/or National Laboratory may be appropriate, their participation cannot represent a "substantial involvement," meaning the aggregate M&O and/or National Laboratory involvement cannot exceed 20 percent of the applicant's total estimated project cost.

Funds are not presently available for this program solicitation. The Government's obligation under this award is contingent upon the availability of appropriated funds from which payment for award purposes can be made. It is anticipated that between two and four cooperative agreement awards will be made during the first quarter of Fiscal Year 2001, with a total estimated cost from \$5 million to \$15 million per award. Even though the Government anticipates awarding cooperative agreements, the Government reserves the right to award the type of agreement deemed to be in its best interest.

Since this particular program is covered by Sections 3001 and 3002 of the Energy Policy Act (EPA) , 42 U.S.C. 13542 for financial assistance awards, cost sharing is mandatory. EPA 3002 requires a cost share commitment of at least 20 percent of the total estimated project cost from non-Federal sources for research and development projects and at least 50 percent of the total estimated project cost from non-Federal sources for demonstration and commercial projects. The Government has established a mandatory cost share of 20 percent for Phase I, 35 percent for Phase II, and 50 percent for Phase III. If during the preliminary application review it is found that the Applicant does not satisfy the cost share requirement as set forth in the solicitation, the application will not be comprehensively reviewed and thus shall not be considered for an award.

It should be noted that this particular program is covered by Section 2306 of EPA, 42 U.S.C. 13525 for financial assistance awards. The solicitation contains the applicable EPA representation form(s) for Foreign-owned companies to complete, that are not applicable to U.S.-owned entities.

The Government does not anticipate providing any facilities or property for accomplishing this effort. Applicants are encouraged to propose utilization of existing facilities and make allowance for providing all necessary personnel, facilities, and materials to complete the proposed activity. Applications must be submitted in accordance with the requirements of the solicitation preparation instructions in Section VI. Applicants are also advised to give particular attention to the evaluation criteria identified in Section VII. Each of the required application parts should be bound separately and clearly labeled. The applications must be received by the Contract Specialist not later than 3:00 p.m. local prevailing time on **June 27, 2000**, at the address below:

U.S. Department of Energy
National Energy Technology Laboratory
ATTN: Kelly McDonald
3610 Collins Ferry Road
Morgantown, WV 26507-0880

Applications must authorize a period for acceptance by the Government of not less than one hundred eighty (180) calendar days from the date specified for receipt of applications.

All requests for explanation or interpretation of any part of the solicitation shall be submitted in writing to the Contract Specialist at the above address. Questions must be received by the Contract Specialist via E-mail or in writing not later than 3:00 p.m. local prevailing time on May 26, 2000. The Government reserves the right not to respond to questions submitted after this date, nor to respond to questions submitted by telephone or in person at any time. If the Government elects to answer the questions, the questions will be answered via an amendment to the solicitation, with copies of both questions and answers included in the amendment, without reference to the originating sources. All amendments will be posted on the NETL Homepage at "<http://www.netl.doe.gov/business/solicit/>"; therefore, applicants are encouraged to periodically check the NETL Homepage to ascertain the status of any amendments as hard copies will not be distributed.

In order to ensure that NETL has the appropriate type and number of evaluators, please indicate your intention to propose no later than 3:00 p.m. on May 31, 2000 by electronically sending the enclosed "Intention to Propose" form, located in Section VIII of the solicitation, to the following address: kelly.mcdonald@netl.doe.gov. It should be noted that the "Intention to Propose" form is not a requirement in order to submit an application.

It is recommended that all prospective applicants' download a copy of the DOE "Lobbying Brochure" (<http://www.pr.doe.gov/lobbying.html>) which provides a summary of the statutory and regulatory restrictions regarding lobbying activities for Federal contractors and recipients.

Please note that an automated document writing system has been used to prepare this document. Each provision in the data base has been assigned a number. Not all of the provisions in the data base have been used in this document; therefore, the numbering may not be continuous. Blanks areas appearing in the solicitation, indicated by "[TBD]" or "[To Be Determined]" will be completed after negotiations.

All communications concerning this solicitation should cite the Program Solicitation number and be directed in writing to the attention of the Kelly McDonald, Contract Specialist via mail at the above address, via fax at 304/285-4683, or via E-mail at kelly.mcdonald@netl.doe.gov.

Lastly, DOE has a Financial Assistance Internet web site where the public can obtain information related to grants and cooperative agreements. The web site, at <http://www.pr.doe.gov/fahome.html>, highlights an "Opportunity to Comment" on the current financial assistance program simplification effort. Comments should be provided via E-mail to: PL106107@pr.doe.gov. All comments will be reviewed, analyzed, and summarized for use by DOE and the various interagency work groups involved with implementation of the law.

The Opportunity to Comment includes identifying those processes in the financial assistance life cycle that need streamlining or improvement and offering suggestions for achieving improvements. It asks the recipient community: 1) to describe what is most important in terms of program simplification; 2) to identify the specific financial assistance programs found to be most burdensome, and 3) to provide details about why they are burdensome. DOE will consider all responses in its simplification effort and provide summaries to the interagency working groups.

The input is valued, and is part of the larger process of achieving the goals the Department and of P.L. 106-107, namely simplification of Federal financial assistance programs for the benefit of our recipients.

Sincerely,

Kelly McDonald
Contract Specialist
Acquisition and Assistance Division

U.S. DEPARTMENT OF ENERGY
NOTICE OF FINANCIAL ASSISTANCE AWARD
(See Instructions on Reverse)

Under the authority of Public Law Federal Grant and Cooperative Agreement Act, Public Law 97-224 as amended by Public Law 97-258 (U.S.C. 6301-6308) and DOE Organization Act, Public Law 95-91 and subject to legislation, regulations and policies applicable to (cite legislative program title):

<p>1. PROJECT TITLE Hybrid Power Systems</p>	<p>2. INSTRUMENT TYPE <input type="checkbox"/> GRANT <input checked="" type="checkbox"/> COOPERATIVE AGREEMENT</p>				
<p>3. RECIPIENT (Name, address, zip code, area code and telephone no.)</p>	<p>4. INSTRUMENT NO. DE-FC26-00NT40779</p>				
	<p>5. AMENDMENT NO. A000</p>				
<p>8. RECIPIENT PROJECT DIRECTOR (Name and telephone no.)</p>	<p>6. BUDGET PERIOD FROM: THRU:</p>				
	<p>7. PROJECT PERIOD FROM: THRU:</p>				
<p>9. RECIPIENT BUSINESS OFFICER (Name and telephone no.)</p>	<p>10. TYPE OF AWARD <input checked="" type="checkbox"/> NEW <input type="checkbox"/> CONTINUATION <input type="checkbox"/> RENEWAL <input type="checkbox"/> REVISION <input type="checkbox"/> SUPPLEMENT</p>				
<p>11. DOE PROJECT OFFICER (Name, address, zip code, telephone no.)</p>	<p>12. ADMINISTERED FOR DOE BY (Name, address, zip code, telephone no.)</p>				
<p>13. RECIPIENT TYPE</p> <p> <input type="checkbox"/> STATE GOV'T <input type="checkbox"/> INDIAN TRIBAL GOV'T <input type="checkbox"/> HOSPITAL <input type="checkbox"/> FOR PROFIT ORGANIZATION <input type="checkbox"/> INDIVIDUAL <input type="checkbox"/> LOCAL GOV'T <input type="checkbox"/> INSTITUTION OF HIGHER EDUCATION <input type="checkbox"/> OTHER NONPROFIT ORGANIZATION <input type="checkbox"/> C <input type="checkbox"/> P <input type="checkbox"/> SP <input type="checkbox"/> OTHER (Specify) </p>					
<p>14. ACCOUNTING AND APPROPRIATIONS DATA:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">a. Appropriation Symbol</td> <td style="width: 25%;">b. B&R Number</td> <td style="width: 25%;">c. FT/AFP/OC</td> <td style="width: 25%;">d. CFA Number</td> </tr> </table>		a. Appropriation Symbol	b. B&R Number	c. FT/AFP/OC	d. CFA Number
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<p>15. EMPLOYER I.D. NUMBER/SSN</p>					
<p>16. BUDGET AND FUNDING INFORMATION</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; vertical-align: top;"> <p>a. CURRENT BUDGET PERIOD INFORMATION</p> <p>(1) DOE Funds Obligated This Action \$ _____</p> <p>(2) DOE Funds Authorized for Carry Over \$ _____</p> <p>(3) DOE Funds Previously Obligated in this Budget Period \$ _____</p> <p>(4) DOE Share of Total Approved Budget \$ _____</p> <p>(5) Recipient Share of Total Approval Budget \$ _____</p> <p>(6) Total Approved Budget \$ _____</p> </td> <td style="width: 50%; vertical-align: top;"> <p>b. CUMULATIVE DOE OBLIGATIONS</p> <p>(1) This Budget Period \$ _____ [Total of lines a.(1) and a.(3)]</p> <p>(2) Prior Budget Periods \$ _____</p> <p>(3) Project Period to Date \$ _____ [Total of lines b.(1) and b.(2)]</p> </td> </tr> </table>		<p>a. CURRENT BUDGET PERIOD INFORMATION</p> <p>(1) DOE Funds Obligated This Action \$ _____</p> <p>(2) DOE Funds Authorized for Carry Over \$ _____</p> <p>(3) DOE Funds Previously Obligated in this Budget Period \$ _____</p> <p>(4) DOE Share of Total Approved Budget \$ _____</p> <p>(5) Recipient Share of Total Approval Budget \$ _____</p> <p>(6) Total Approved Budget \$ _____</p>	<p>b. CUMULATIVE DOE OBLIGATIONS</p> <p>(1) This Budget Period \$ _____ [Total of lines a.(1) and a.(3)]</p> <p>(2) Prior Budget Periods \$ _____</p> <p>(3) Project Period to Date \$ _____ [Total of lines b.(1) and b.(2)]</p>		
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<p>17. TOTAL ESTIMATED COST OF PROJECT \$ _____ <i>(This is the current estimated cost of the project. It is not a promise to award nor an authorization to expend funds in this amount.)</i></p>					
<p>18. AWARD AGREEMENT TERMS AND CONDITIONS</p> <p>This award/agreement consists of this form plus the following:</p> <p>a. Special terms and conditions (if granted) or schedule, provisions, special concerns (if cooperative agreement).</p> <p>b. Applicable program regulations (specify) _____ (Date) _____.</p> <p>c. DOE Assistance Regulations, 10 CFR Part-600, as amended, Subparts A and <input type="checkbox"/> B (Grants) or <input checked="" type="checkbox"/> C (Cooperative Agreements).</p> <p>d. Application/proposal dated _____, <input type="checkbox"/> as submitted <input type="checkbox"/> with changes as negotiated.</p>					
<p>19. REMARKS</p>					
<p>20. EVIDENCE OF RECIPIENT ACCEPTANCE</p> <p>_____ <i>(Signature of Authorized Recipient Official)</i> <i>(Date)</i></p> <p>_____ <i>(Name)</i></p> <p>_____ <i>(Title)</i></p>	<p>21. AWARDED BY</p> <p>_____ <i>(Signature)</i> <i>(Date)</i></p> <p>_____ <i>(Name)</i></p> <p>_____ Contracting Officer <i>(Title)</i></p>				

SECTION II -- SPECIAL TERMS AND CONDITIONS

2.1 CONSECUTIVE NUMBERING (JAN 1999)

Due to automated procedures employed in formulating this document, clauses and provisions within it may not always be continuously numbered.

2.2 PREVAILING REGULATIONS (NOV 1998)

As indicated on the face page, Block 18c, this Award is subject to the DOE Assistance Regulations of Title 10, Code of Federal Regulations, Part 600. This set of regulations may be found in most major libraries or on the World Wide Web at: <http://www.pr.doe.gov/fahome.html>

2.3 ORDER OF PRECEDENCE (DEC 1999)

In the event of any inconsistency among the provisions of this agreement, the inconsistency shall be resolved by giving precedence as follows: (a) Applicable Public Laws; (b) the special terms and conditions or schedule of articles; (c) 10 CFR Part 600; and (d) other documents, exhibits and attachments.

2.4 SUBSTANTIAL INVOLVEMENT BETWEEN DOE AND THE RECIPIENT (JAN 1999)

There will be substantial involvement between the DOE and the Recipient during performance of this Cooperative Agreement.

The following type of activity is generally viewed as substantial involvement:

- Review and approval during the project period of one phase before work can begin on a subsequent phase in sharing of the responsibility for the direction of the project. (i.e. The DOE will participate in establishing and approving a work plan, which will identify essential and significant milestones necessary for completion of the project. This work plan will be used to determine whether or not to proceed with subsequent tasks of the Statement of Project Objectives.)

2.5 COST SHARING (DEC 1999)

The maximum DOE obligation under this agreement is \$ [To Be Determined]. Costs incurred in excess of this amount shall be borne solely by the recipient. In the event that costs incurred under this agreement are less than the amount set forth in Block 16.b.(3) of the face page of this award, DOE and the recipient shall share total project costs in accordance with the following percentages:

Shares	Phase I	% Share	Phase II	% Share	Phase III	% Share	Total Phases	Total % Share
Government	\$(TBD)	80%	\$(TBD)	65%	\$(TBD)	50%	\$(TBD)	
Recipient	\$(TBD)	20%	\$(TBD)	35%	\$(TBD)	50%	\$(TBD)	
Total	\$(TBD)	100%	\$(TBD)	100%	\$(TBD)	100%	\$(TBD)	

The cost share percentages identified in the table above reflect minimum cost share requirements. It should be noted that applications may include cost sharing exceeding the minimum requirements.

2.6 FUNDING (JULY 1999)

Funding in the amount of [To Be Determined] is obligated and made available for payment of the Government's share of allowable costs.

The Recipient shall promptly notify the Contracting Officer in writing of the estimated amount of additional funds, if any, are required to continue timely performance under this award and when the funds will be required. The maximum DOE obligation to the Recipient is shown in Block 16 of the DOE Form 4600.1. The Government is not obligated to increase the total dollar amount funded and the Recipient is not obligated to continue performance under this award or otherwise incur costs to the extent that the Government's share of allowable costs would exceed the amount obligated by the Government.

2.7 CONTINUATION APPLICATION (DEC 1999)

Funding for each budget period within the approved project period shall be contingent on DOE approval of a continuation application submitted no later than 60 days prior to the end of the current budget period. The continuation application shall be submitted on the SF 424 in accordance with 10 CFR 600.26. Forms for submission of continuation applications can be found at <http://www.netl.doe.gov/business/forms/forms.html>.

2.8 METHOD OF PAYMENT - PAYMENT MANAGEMENT SYSTEM (PMS) 10 CFR 600.122 (NOV 1998)

Payment Management System (PMS): The Recipient is required to maintain advances of federal funds in interest bearing accounts. Any interest income earned by the Recipient on federal funds must be remitted at least quarterly to the cognizant DOE office. However, up to \$250 of the interest earned per year may be retained by the Recipient to cover administrative expenses.

Funds advanced to the Recipient must be kept to a minimum amount necessary to meet the Recipient's cash flow needs. Cash needs shall be determined by the Recipient's cash outlay requirements and shall not be based on costs incurred. If funds are erroneously drawn in excess of the Recipient's immediate disbursement needs, the excess funds should be promptly refunded and reissued when needed. The only exception to this is when excess funds will be disbursed by the Recipient within seven calendar days or when the excess funds are less than \$10,000 and will be disbursed within thirty (30) calendar days.

A computer generated report (PMS 272 -- Federal Cash Transaction Report, Status of Federal Cash) will be furnished by the Department of Health and Human Services (DHHS) to all Recipients on a quarterly basis with active PMS accounts. The Recipient will be required to review the report and certify that the data is correct. In addition to returning the certified report to the DHHS, a copy of the report should be sent to the cognizant Contracting Officer. Unsigned reports will be returned and may cause delays in payment if the report due date has passed.

A detailed statement of costs incurred and the cost sharing amount shall be forwarded to the Contracting Officer concurrent with draw-downs from the PMS.

2.9 ACKNOWLEDGMENT OF FEDERAL FUNDING (NOV 1998)

When issuing statements, press releases, requests for proposals, bid solicitations, and other documents describing this project, the Recipient shall clearly state (1) the percentage of the total cost of the project which will be financed with Federal money, and (2) the dollar amount of Federal funds for the project.

2.10 REAL PROPERTY - NONE (JAN 1999)

It is anticipated that no real property will be acquired under this award.

2.11 RECIPIENT ACQUIRED PROPERTY (MAY 1999)

Reference Attachment D for a listing of property authorized for acquisition under this award. Property acquired by the Recipient under this award shall be managed in accordance with 10 CFR 600.130 to 10 CFR 600.137, and reported as prescribed in Attachment B, Federal Assistance Reporting Checklist.

2.12 KEY PERSONNEL (NOV 1998)

Recipient personnel considered to be essential and key to the work being performed hereunder are specified below.

<u>NAME</u>	<u>TITLE</u>	<u>TELEPHONE</u>
[TBD]	[TBD]	[TBD]

The personnel specified in this clause are considered to be essential to the project. Before diverting any key personnel to work outside the scope of this award, the Recipient shall notify the Contracting Officer reasonably in advance and shall submit justification (including proposed substitutions) in sufficient detail to permit evaluation of the impact on the project. No key personnel may be substituted without the Contracting Officer's approval. Such approval shall be obtained in advance of the substitution, except that the Contracting Officer may ratify a substitution which, because of exigent circumstances, was made before the Recipient could request and/or obtain the Contracting Officer's approval.

2.13 PAPERWORK REDUCTION (NOV 1998)

The award is subject to the requirements of the Paperwork Reduction Act of 1980 as implemented by the Office of Management and Budget rules, "Controlling Paperwork Burdens on the Public," published at 5 CFR 1320. These requirements apply if the Recipient will collect information from ten (10) or more respondents at the specific request of DOE, or if the award requires specific DOE approval of the information collection or the collection procedures.

The Recipient shall submit any proposed sponsored information collection to the person identified on the DOE F 4600.1 (Award Face Page, Block 12). The proposal shall be submitted at least 120 days prior to the intended date of information collection. DOE will seek the requisite approval from the Office of Management and Budget (OMB) and will promptly notify the Recipient of the disposition of the request.

2.14 PUBLIC ACCESS TO INFORMATION (APR 2000)

The Freedom of Information Act, as amended, and the DOE implementing regulations (10 CFR 1004) require DOE to release certain documents and records regarding awards to any person who provides a written request. The intended use of the information will not be a criterion for release.

2.15 NATIONAL SECURITY (NOV 1998)

It is not expected that activities under the award will generate or otherwise involve classified information (i.e., Restricted Data, Formerly Restricted Data, National Security Information).

However, if in the opinion of the Recipient or DOE such involvement becomes expected prior to the closeout of the award, the Recipient or DOE shall notify the other in writing immediately. If the Recipient believes any information developed or acquired may be classifiable, the Recipient shall not provide the potentially classifiable information to anyone, including the DOE officials with whom the Recipient normally communicates, except the Director of Classification, and shall protect such information as if it were classified until notified by DOE that a determination has been made that it does not require such handling. Correspondence which includes the specific information

in question shall be sent by registered mail to U. S. Department of Energy, Attn.: Executive Assistant for Defense Programs, DP-4, 4A-019/FORS, 1000 Independence Avenue, Washington, D.C. 20585. If the information is determined to be classified, the Recipient may wish to discontinue the project, in which case the Recipient and DOE shall terminate the award by mutual agreement. If the award is to be terminated, all materials deemed by DOE to be classified shall be forwarded to DOE, in a manner specified by DOE, for proper disposition. If the Recipient and DOE wish to continue the award, even though classified information is involved, the Recipient shall be required to obtain both personnel and facility security clearances through the Office of Safeguards and Security for Headquarters awarded awards obtained through DOE field organizations. Costs associated with handling and protecting any such classified information shall be negotiated at the time the determination to proceed is made.

2.16 COMPLIANCE WITH BUY AMERICAN ACT (DEC 1999)

In accepting this award, the Recipient agrees to comply with sections 2 through 4 of the Act of March 3, 1933 (41 U.S.C. 10a-10c, popularly known as the "Buy American Act"). The Recipient should review the provisions of the Act to ensure that expenditures made under this award are in accordance with it.

2.17 NOTICE REGARDING THE PURCHASE OF AMERICAN-MADE EQUIPMENT AND PRODUCTS -- SENSE OF CONGRESS (DEC 1999)

It is the sense of the Congress, that to the greatest extent practicable, all equipment and products purchased with funds made available under this award should be American-made.

2.18 LOBBYING RESTRICTION (DEPARTMENT OF INTERIOR AND RELATED AGENCIES APPROPRIATIONS ACT, 2000) (DEC 1999)

The awardee agrees that none of the funds obligated on this award shall be made available for any activity or the publication or distribution of literature that in any way tends to promote public support or opposition to any legislative proposal on which Congressional action is not complete. This restriction is in addition to those prescribed elsewhere in statute and regulation.

A copy of the DOE "Lobbying Brochure" which provides a summary of the statutory and regulatory restrictions regarding lobbying activities for Federal contractors can be found at (<http://www.pr.doe.gov/lobbying.html>).

2.19 NOTICE REGARDING UNALLOWABLE COSTS AND LOBBYING ACTIVITIES (NOV 1998)

Recipients of financial assistance are cautioned to carefully review the allowable cost and other provisions applicable to expenditures under their particular award instruments. If financial assistance funds are spent for purposes or in amounts inconsistent with the allowable cost or any other provisions governing expenditures in an award instrument, the government may pursue a number of remedies against the Recipient, including in appropriate circumstances, recovery of such funds, termination of the award, suspension or debarment of the Recipient from future awards, and criminal prosecution for false statements.

Particular care should be taken by the Recipient to comply with the provisions prohibiting the expenditure of funds for lobbying and related activities. Financial assistance awards may be used to describe and promote the understanding of scientific and technical aspects of specific energy technologies, but not to encourage or support political activities such as the collection and dissemination of information related to potential, planned or pending legislation.

2.20 YEAR 2000 COMPLIANCE (NOV 1998)

The Recipient assures, by acceptance of this award, that items delivered under this contract are year 2000 compliant. Year 2000 compliant means, with respect to information technology, the

information technology accurately processes date/time data (including, but not limited to, calculating, comparing, and sequencing) from, into, and between the twentieth and twenty-first centuries, and the years 1999 and 2000 and leap year calculations, to the extent that other information technology, used in combination with the information technology being acquired, properly exchanges date/time data with it.

2.21 REPORTING (NOV 1998)

Failure to comply with the reporting requirements contained in this award will be considered a material noncompliance with the terms of the award. Noncompliance may result in a withholding of future payments, suspension or termination of the current award, and withholding of future awards. A willful failure to perform, or of unsatisfactory performance of this and/or other financial assistance awards, may also result in a debarment action to preclude future awards by Federal agencies.

2.22 RESEARCH INVOLVING RECOMBINANT DNA MOLECULES (NOV 1998)

Any Recipient performing research involving recombinant DNA molecules and/or organisms and viruses containing recombinant DNA molecules agrees by acceptance of this award to comply with the National Institute of Health "Guidelines for Research Involving Recombinant DNA Molecules," (59 FR 34496, July 5, 1994 as amended by 59 FR 40170, 60 FR 20726, 61 FR 1482, 61 FR 10004, 62 FR 53335, 62 FR 56196, 62 FR 59032 and 63 FR 8052, "subject to change - call 301-496-9838 to obtain reference to a current version.")

2.23 NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) -- PRIOR APPROVALS (DEC 1999)

The National Environmental Policy Act of 1969 (NEPA) requires that all Federal agencies consider the impacts of their projects on the human environment. As part of the DOE's NEPA requirements, the Recipient shall be required to supply to the DOE certain environmental information. DOE funds may only be expended by the Recipient on [INSERT ACTIVITIES THAT CAN BE PERFORMED UNTIL THE NEPA DOCUMENT IS SIGNED, i.e., preliminary designs or drawings] activities, or in a manner inconsistent with 10 CFR 1506.1, until DOE notifies the Recipient that all NEPA requirements have been satisfied.

2.24 SAFETY & HEALTH AND ENVIRONMENTAL PROTECTION (JAN 1999)

The Recipient shall implement the DOE work in accordance with all applicable Federal, State, and local laws, including codes, ordinances, and regulations, covering safety, health, and environmental protection.

The Recipient agrees to include this clause in first-tier subcontracts and agrees to enforce the terms of this clause.

2.25 PERMITS AND LICENSES (AUG 1999)

Within sixty (60) days of award, the Recipient shall submit to the DOE Contracting Officer Representative (COR) a list of ES&H approvals that, in the Recipient's opinion, shall be required to complete the work under this award. The list shall include the topic of the approval being sought, the approving authority, and the expected submittal/approval schedule. The COR shall be notified as specific items are added or removed from the list and processed through their approval cycles.

The Recipient agrees to include this clause in first-tier subcontracts and agrees to enforce the terms of this clause.

2.26 RESTRICTIONS ON TRANSFER OF FUEL CELL TECHNOLOGY TO A FOREIGN ENTITY (MAY 1998)

It is agreed that the Recipient shall obtain adequate recognition of the United States Government's support for the patented or unpatented technology developed or utilized under this award in any contracts, licenses, or other agreements which involve the transfer to a foreign entity of the fuel cell technology developed in whole or in part at Government expense. The Recipient agrees to notify the Assistant Secretary for Fossil Energy in writing of the adequate recognition obtained prior to entering into any such contracts, licenses, or other agreements. The Recipient shall not enter into any such contracts, licenses, or other agreements without the concurrence of the Assistant Secretary for Fossil Energy or designee. The determination of whether to grant such concurrence shall be at the sole discretion of the Assistant Secretary for Fossil Energy or designee and is not subject to litigation under the Contract Disputes Act of 1978 (41 U.S.C. 601-613). The determination shall be in writing and shall be furnished to the Recipient by the Contracting Officer.

The prior written approval of the Assistant Secretary for Fossil Energy or designee will be required before the Recipient may assign or transfer any right in or grant license or sublicense for such invention or contract data to a foreign entity.

"Foreign entity" includes a foreign organization or person(s) subject to the control of a foreign company or government.

This article shall be included in all subcontracts.

2.27 REQUIREMENT FOR U.S. MANUFACTURE (MAY 1998)

The Recipient agrees that in the event it receives title or other rights to any subject invention, neither it nor any assignee will use or sell, nor grant to any person the right to make, use, or sell, any subject invention unless the products embodying the subject invention, or produced through the use of such invention, will be manufactured substantially in the U.S. This requirement may be waived by the Department of Energy, Assistant Secretary for Fossil Energy in individual cases upon a showing by the Recipient or assignee that domestic manufacture is not commercially feasible. The substance of this article may be incorporated into the terms of any patent waiver or other grant of greater rights; provided, however, that the requirements of this article will apply whether or not such incorporation is made.

SECTION III -- INTELLECTUAL PROPERTY PROVISIONS

3.1 INTELLECTUAL PROPERTY PROVISIONS (JAN 1999)

The patent and technical data clauses included in this section apply to this award. As used in these applicable clauses, the term "Patent Counsel" refers to the following point of contact:

Intellectual Property Law Division
U.S. Department of Energy
Chicago Operations Office
9800 South Cass Avenue
Argonne, IL 60439

In any of the FAR and DEAR clauses contained in this section, use of the term "Contract" means "Award" and "Contractor" means "Recipient."

The Recipient shall include intellectual property clauses in any contract awarded in accordance with requirements of the clauses in this section and of 10 CFR Part 600.27.

3.2 PUBLICATION OF RESULTS/ACKNOWLEDGMENT STATEMENT (JAN 1999)

Publication of the results of the award is encouraged subject to any applicable restrictions in 10 CFR 600.27 (Patent and Data Provisions). Publications, as well as reports prepared under this award shall contain the following acknowledgment statement:

"This (describe material) was prepared with the support of the U.S. Department of Energy, under Award No. DE-[To Be Determined]. However, any opinions, findings, conclusions, or recommendations expressed herein are those of the author(s) and do not necessarily reflect the views of the DOE".

3.3 RECIPIENT PRESS RELEASES (APR 1998)

The DOE policy and procedure on planned press releases requires that all Recipient press releases be reviewed and approved by DOE prior to issuance. Therefore, the Recipient shall, at least ten (10) days prior to the planned issue date, submit a draft copy to the Contracting Officer of any planned press releases related to work performed under this award. The Contracting Officer will then obtain necessary reviews and clearances and provide the Recipient with the results of such reviews prior to the planned issue date.

3.4 CONFIDENTIAL BUSINESS INFORMATION (DEC 1999)

Data represented to the Department as being confidential business information, and which does not include "Technical Data" as that term is defined in 52.227-14 Rights in Data General clause of this agreement, shall be submitted as an attachment to the required reports and will be withheld from disclosure outside NETL to the extent permitted by law, provided such attachment and each page therein is stamped with the following legend and no other:

CONFIDENTIAL BUSINESS INFORMATION

The Recipient considers the data furnished herein to contain confidential business information which is to be withheld from disclosure outside NETL to the extent permitted by law.

3.5 52.227-1 AUTHORIZATION AND CONSENT. (JUL 1995) -- ALTERNATE I (APR 1984)

(a) The Government authorizes and consents to all use and manufacture of any invention described in and covered by a United States patent in the performance of this contract or any subcontract at any tier.

(b) The Contractor agrees to include, and require inclusion of, this clause, suitably modified to identify the parties, in all subcontracts at any tier for supplies or services (including construction, architect-engineer services, and materials, supplies, models, samples, and design or testing services expected to exceed the simplified acquisition threshold); however, omission of this clause from any subcontract, including those at or below the simplified acquisition threshold, does not affect this authorization and consent.

3.6 52.227-2 NOTICE AND ASSISTANCE REGARDING PATENT AND COPYRIGHT INFRINGEMENT. (AUG 1996)

(a) The Contractor shall report to the Contracting Officer, promptly and in reasonable written detail, each notice or claim of patent or copyright infringement based on the performance of this contract of which the Contractor has knowledge.

(b) In the event of any claim or suit against the Government on account of any alleged patent or copyright infringement arising out of the performance of this contract or out of the use of any supplies furnished or work or services performed under this contract, the Contractor shall furnish to the Government, when requested by the Contracting Officer, all evidence and information in possession of the Contractor pertaining to such suit or claim. Such evidence and information shall be furnished at the expense of the Government except where the Contractor has agreed to indemnify the Government.

(c) The Contractor agrees to include, and require inclusion of, this clause in all subcontracts at any tier for supplies or services (including construction and architect-engineer subcontracts and those for material, supplies, models, samples, or design or testing services) expected to exceed the simplified acquisition threshold at FAR 2.101.

3.8 952.227-11 PATENT RIGHTS-RETENTION BY THE CONTRACTOR (SHORT FORM). (FEB 1995)

(a) Definitions.

(1) "Invention" means any invention or discovery which is or may be patentable or otherwise protectable under title 35 of the United States Code, or any novel variety of plant which is or may be protected under the Plant Variety Protection Act (7 U.S.C. 2321, et seq.).

(2) "Made" when used in relation to any invention means the conception of first actual reduction to practice of such invention.

(3) "Nonprofit organization" means a university or other institution of higher education or an organization of the type described in section 501(c)(3) of the Internal Revenue Code of 1954 (26 U.S.C. 501(c)) and exempt from taxation under section 501(a) of the Internal Revenue Code (26 U.S.C. 501(a)) or any nonprofit scientific or educational organization qualified under a state nonprofit organization statute.

(4) "Practical application" means to manufacture, in the case of a composition or product; to practice, in the case of a process or method; or to operate, in the case of a machine or system; and, in each case, under such conditions as to establish that the invention is being utilized and that its benefits are, to the extent

permitted by law or Government regulations, available to the public on reasonable terms.

(5) "Small business firm" means a small business concern as defined at section 2 of Pub. L. 85-536 (15 U.S.C. 632) and implementing regulations of the Administrator of the Small Business Administration. For the purpose of this clause, the size standards for small business concerns involved in Government procurement and subcontracting at 13 CFR 121.3-8 and 13 CFR 121.3-12, respectively, will be used.

(6) "Subject invention" means any invention of the contractor conceived or first actually reduced to practice in the performance of work under this contract, provided that in the case of a variety of plant, the date of determination (as defined in section 41(d) of the Plant Variety Protection Act, 7 U.S.C. 2401(d)) must also occur during the period of contract performance.

(7) "Agency licensing regulations" and "agency regulations concerning the licensing of Government-owned inventions" mean the Department of Energy patent licensing regulations at 10 CFR Part 781.

(b) Allocation of principal rights. The Contractor may retain the entire right, title, and interest throughout the world to each subject invention subject to the provisions of this clause and 35 U.S.C. 203. With respect to any subject invention in which the Contractor retains title, the Federal Government shall have a nonexclusive, nontransferable, irrevocable, paid-up license to practice or have practiced for or on behalf of the United States the subject invention throughout the world.

(c) Invention disclosure, election of title, and filing of patent application by Contractor.

(1) The Contractor will disclose each subject invention to the Department of Energy (DOE) within 2 months after the inventor discloses it in writing to Contractor personnel responsible for patent matters. The disclosure to DOE shall be in the form of a written report and shall identify the contract under which the invention was made and the inventor(s). It shall be sufficiently complete in technical detail to convey a clear understanding to the extent known at the time of the disclosure, of the nature, purpose, operation, and the physical, chemical, biological or electrical characteristics of the invention. The disclosure shall also identify any publication, on sale or public use of the invention and whether a manuscript describing the invention has been submitted for publication and, if so, whether it has been accepted for publication at the time of disclosure. In addition, after disclosure to the DOE, the Contractor will promptly notify that agency of the acceptance of any manuscript describing the invention for publication or of any on sale or public use planned by the Contractor.

(2) The Contractor will elect in writing whether or not to retain title to any such invention by notifying DOE within 2 years of disclosure to DOE. However, in any case where publication, on sale or public use has initiated the 1-year statutory period wherein valid patent protection can still be obtained in the United States, the period for election of title may be shortened by DOE to a date that is no more than 60 days prior to the end of the statutory period.

(3) The Contractor will file its initial patent application on a subject invention to which it elects to retain title within 1 year after election of title or, if earlier, prior to the end of any statutory period wherein valid patent protection can be obtained in the United States after a publication, on sale, or public use. The Contractor will file patent applications in additional countries or international patent offices within either 10 months of the corresponding initial patent application or 6 months from

the date permission is granted by the Commissioner of Patents and Trademarks to file foreign patent applications where such filing has been prohibited by a Secrecy Order.

(4) Requests for extension of the time for disclosure, election, and filing under subparagraphs (c)(1), (2), and (3) of this clause may, at the discretion of the agency, be granted.

(d) Conditions when the Government may obtain title. The Contractor will convey to the Federal agency, upon written request, title to any subject invention--

(1) If the Contractor fails to disclose or elect title to the subject invention within the times specified in paragraph (c) of this clause, or elects not to retain title; provided, that DOE may only request title within 60 days after learning of the failure of the Contractor to disclose or elect within the specified times.

(2) In those countries in which the Contractor fails to file patent applications within the times specified in paragraph (c) of this clause; provided, however, that if the Contractor has filed a patent application in a country after the times specified in paragraph (c) of this clause, but prior to its receipt of the written request of the Federal agency, the Contractor shall continue to retain title in that country.

(3) In any country in which the Contractor decides not to continue the prosecution of any application for, to pay the maintenance fees on, or defend in reexamination or opposition proceeding on, a patent on a subject invention.

(e) Minimum rights to Contractor and protection of the Contractor right to file.

(1) The Contractor will retain a nonexclusive royalty-free license throughout the world in each subject invention to which the Government obtains title, except if the Contractor fails to disclose the invention within the times specified in paragraph (c) of this clause. The Contractor's license extends to its domestic subsidiary and affiliates, if any, within the corporate structure of which the Contractor is a party and includes the right to grant sublicenses of the same scope to the extent the Contractor was legally obligated to do so at the time the contract was awarded. The license is transferable only with the approval of the Federal agency, except when transferred to the successor of that part of the Contractor's business to which the invention pertains.

(2) The Contractor's domestic license may be revoked or modified by DOE to the extent necessary to achieve expeditious practical application of subject invention pursuant to an application for an exclusive license submitted in accordance with applicable provisions at 37 CFR Part 404 and agency licensing regulations. This license will not be revoked in that field of use or the geographical areas in which the Contractor has achieved practical application and continues to make the benefits of the invention reasonably accessible to the public. The license in any foreign country may be revoked or modified at the discretion of DOE to the extent the Contractor, its licensees, or the domestic subsidiaries or affiliates have failed to achieve practical application in that foreign country.

(3) Before revocation or modification of the license, DOE will furnish the Contractor a written notice of its intention to revoke or modify the license, and the Contractor will be allowed 30 days (or such other time as may be authorized by DOE for good cause shown by the Contractor) after the notice to show cause why the license should not be revoked or modified. The Contractor has the right to appeal, in accordance with applicable regulations in 37 CFR Part 404 and agency

regulations concerning the licensing of Government owned inventions, any decision concerning the revocation or modification of the license.

(f) Contractor action to protect the Government's interest.

(1) The Contractor agrees to execute or to have executed and promptly deliver to DOE all instruments necessary to (i) establish or confirm the rights the Government has throughout the world in those subject inventions to which the Contractor elects to retain title, and (ii) convey title to DOE when requested under paragraph (d) of this clause and to enable the government to obtain patent protection throughout the world in that subject invention.

(2) The Contractor agrees to require, by written agreement, its employees, other than clerical and nontechnical employees, to disclose promptly in writing to personnel identified as responsible for the administration of patent matters and in a format suggested by the Contractor each subject invention made under contract in order that the Contractor can comply with the disclosure provisions of paragraph (c) of this clause, and to execute all papers necessary to file patent applications on subject inventions and to establish the Government's rights in the subject inventions. This disclosure format should require, as a minimum, the information required by subparagraph (c)(1) of this clause. The Contractor shall instruct such employees, through employee agreements or other suitable educational programs, on the importance of reporting inventions in sufficient time to permit the filing of patent applications prior to U.S. or foreign statutory bars.

(3) The Contractor will notify DOE of any decision not to continue the prosecution of a patent application, pay maintenance fees, or defend in a reexamination or opposition proceeding on a patent, in any country, not less than 30 days before the expiration of the response period required by the relevant patent office.

(4) The Contractor agrees to include, within the specification of any United States patent application and any patent issuing thereon covering a subject invention, the following statement, "This invention was made with Government support under (identify the contract) awarded by the United States Department of Energy. The Government has certain rights in the invention."

(g) Subcontracts. (1) The Contractor will include this clause, suitably modified to identify the parties, in all subcontracts, regardless of tier, for experimental, developmental, or research work to be performed by a small business firm or domestic nonprofit organization. The subcontractor will retain all rights provided for the Contractor in this clause, and the Contractor will not, as part of the consideration for awarding the subcontract, obtain rights in the subcontractor's subject inventions.

(2) The contractor shall include in all other subcontracts, regardless of tier, for experimental, developmental, demonstration, or research work the patent rights clause at 952.227-13.

(3) In the case of subcontracts, at any tier, DOE, subcontractor, and the Contractor agree that the mutual obligations of the parties created by this clause constitute a contract between the subcontractor and DOE with respect to the matters covered by the clause; provided, however, that nothing in this paragraph is intended to confer any jurisdiction under the Contract Disputes Act in connection with proceedings under paragraph (j) of this clause.

(h) Reporting on utilization of subject inventions. The Contractor agrees to submit, on request, periodic reports no more frequently than annually on the utilization of a subject invention or on efforts at obtaining such utilization that are being made by the Contractor

or its licensees or assignees. Such reports shall include information regarding the status of development, date of first commercial sale or use, gross royalties received, by the Contractor, and such other data and information as DOE may reasonably specify. The Contractor also agrees to provide additional reports as may be requested by DOE in connection with any march-in proceeding undertaken by that agency in accordance with paragraph (j) of this clause. As required by 35 U.S.C. 202(c)(5), DOE agrees it will not disclose such information to persons outside the Government without permission of the Contractor.

(i) Preference for United States industry. Notwithstanding any other provision of this clause, the Contractor agrees that neither it nor any assignee will grant to any person the exclusive right to use or sell any subject invention in the United States unless such person agrees that any product embodying the subject invention or produced through the use of the subject invention will be manufactured substantially in the United States. However, in individual cases, the requirement for such an agreement may be waived by DOE upon a showing by the Contractor or its assignee that reasonable but unsuccessful efforts have been made to grant licenses on similar terms to potential licensees that would be likely to manufacture substantially in the United States or that under the circumstances domestic manufacture is not commercially feasible.

(j) March-in rights. The Contractor agrees that, with respect to any subject invention in which it has acquired title, DOE has the right in accordance with the procedures in 37 CFR 401.6 and any supplemental regulations of the agency to require the Contractor, an assignee or exclusive licensee of a subject invention to grant a nonexclusive, partially exclusive, or exclusive license in any field of use to a responsible applicant or applicants, upon terms that are reasonable under the circumstances, and, if the Contractor, assignee, or exclusive licensee refuses such a request, DOE has the right to grant such a license itself if DOE determines that--

(1) Such action is necessary because the Contractor or assignee has not taken, or is not expected to take within a reasonable time, effective steps to achieve practical application of the subject invention in such field of use;

(2) Such action is necessary to alleviate health or safety needs which are not reasonably satisfied by the Contractor, assignee, or their licensees;

(3) Such action is necessary to meet requirements for public use specified by Federal regulations and such requirements are not reasonably satisfied by the Contractor, assignee, or licensees; or

(4) Such action is necessary because the agreement required by paragraph (i) of this clause has not been obtained or waived or because a licensee of the exclusive right to use or sell any subject invention in the United States is in breach of such agreement.

(k) Special provisions for contracts with nonprofit organizations. If the Contractor is a nonprofit organization, it agrees that--

(1) Rights to a subject invention in the United States may not be assigned without the approval of the Federal agency, except where such assignment is made to an organization which has as one of its primary functions the management of inventions; provided, that such assignee will be subject to the same provisions as the Contractor;

(2) The Contractor will share royalties collected on a subject invention with the inventor, including Federal employee co-inventors (when DOE deems it appropriate)

when the subject invention is assigned in accordance with 35 U.S.C. 202(e) and 37 CFR 401.10;

(3) The balance of any royalties or income earned by the Contractor with respect to subject inventions, after payment of expenses (including payments to inventors) incidental to the administration of subject inventions will be utilized for the support of scientific research or education; and

(4) It will make efforts that are reasonable under the circumstances to attract licensees of subject inventions that are small business firms, and that it will give a preference to a small business firm when licensing a subject invention if the Contractor determines that the small business firm has a plan or proposal for marketing the invention which, if executed, is equally as likely to bring the invention to practical application as any plans or proposals from applicants that are not small business firms; provided, that the Contractor is also satisfied that the small business firm has the capability and resources to carry out its plan or proposal. The decision whether to give a preference in any specific case will be at the discretion of the contractor. However, the Contractor agrees that the Secretary of Commerce may review the Contractor's licensing program and decisions regarding small business applicants, and the Contractor will negotiate changes to its licensing policies, procedures, or practices with the Secretary of Commerce when that Secretary's review discloses that the Contractor could take reasonable steps to more effectively implement the requirements of this subparagraph (k)(4).

(l) Communications.

(1) The contractor shall direct any notification, disclosure, or request to DOE provided for in this clause to the DOE patent counsel assisting the DOE contracting activity, with a copy of the communication to the Contracting Officer.

(2) Each exercise of discretion or decision provided for in this clause, except subparagraph (k)(4), is reserved for the DOE Patent Counsel and is not a claim or dispute and is not subject to the Contract Disputes Act of 1978.

(3) Upon request of the DOE Patent Counsel or the contracting officer, the contractor shall provide any or all of the following:

(i) a copy of the patent application, filing date, serial number and title, patent number, and issue date for any subject invention in any country in which the contractor has applied for a patent;

(ii) a report, not more often than annually, summarizing all subject inventions which were disclosed to DOE individually during the reporting period specified; or

(iii) a report, prior to closeout of the contract, listing all subject inventions or stating that there were none.

3.9 952.227-13 PATENT RIGHTS-ACQUISITION BY THE GOVERNMENT. (SEP 1997)

(a) Definitions.

"Invention", as used in this clause, means any invention or discovery which is or may be patentable or otherwise protectable under title 35 of the United States Code or any novel variety of plant that is or may be protectable under the Plant Variety Protection Act (7 U.S.C. 2321, et seq.).

"Practical application", as used in this clause, means to manufacture, in the case of a composition or product; to practice, in the case of a process or method; or to operate, in the case of a machine or system; and, in each case, under such conditions as to establish that the invention is being utilized and that its benefits are, to the extent permitted by law or Government regulations, available to the public on reasonable terms.

"Subject invention", as used in this clause, means any invention of the Contractor conceived or first actually reduced to practice in the course of or under this contract.

"Patent Counsel", as used in this clause, means the Department of Energy Patent Counsel assisting the procuring activity.

"DOE patent waiver regulations", as used in this clause, means the Department of Energy patent waiver regulations at 41 CFR 9-9.109- 6 or successor regulations. See 10 CFR Part 784.

"Agency licensing regulations" and "applicable agency licensing regulations", as used in this clause, mean the Department of Energy patent licensing regulations at 10 CFR Part 781.

(b) Allocations of principal rights.

(1) Assignment to the Government. The Contractor agrees to assign to the Government the entire right, title, and interest throughout the world in and to each subject invention, except to the extent that rights are retained by the Contractor under subparagraph (b)(2) and paragraph (d) of this clause.

(2) Greater rights determinations.

(i) The contractor, or an employee-inventor after consultation with the Contractor, may request greater rights than the nonexclusive license and the foreign patent rights provided in paragraph (d) of this clause on identified inventions in accordance with the DOE patent waiver regulations. A request for a determination of whether the Contractor or the employee-inventor is entitled to acquire such greater rights must be submitted to the Patent Counsel with a copy to the Contracting Officer at the time of the first disclosure of the invention pursuant to subparagraph (e)(2) of this clause, or not later than 8 months thereafter, unless a longer period is authorized in writing by the Contracting Officer for good cause shown in writing by the Contractor. Each determination of greater rights under this contract shall be subject to paragraph (c) of this clause, unless otherwise provided in the greater rights determination, and to the reservations and conditions deemed to be appropriate by the Secretary of Energy or designee.

(ii) Within two (2) months after the filing of a patent application, the Contractor shall provide the filing date, serial number and title, a copy of the patent application (including an English-language version if filed in a language other than English), and, promptly upon issuance of a patent, provide the patent number and issue date for any subject invention in any country for which the Contractor has been granted title or the right to file and prosecute on behalf of the United States by the Department of Energy.

(iii) Not less than thirty (30) days before the expiration of the response period for any action required by the Patent and Trademark Office, notify the Patent Counsel of any decision not to continue prosecution of the application.

(iv) Upon request, the Contractor shall furnish the Government an irrevocable power to inspect and make copies of the patent application file.

(c) Minimum rights acquired by the Government.

(1) With respect to each subject invention to which the Department of Energy grants the Contractor principal or exclusive rights, the Contractor agrees as follows:

(i) The Contractor hereby grants to the Government a nonexclusive, nontransferable, irrevocable, paid-up license to practice or have practiced each subject invention throughout the world by or on behalf of the Government of the United States (including any Government agency).

(ii) The Contractor agrees that with respect to any subject invention in which DOE has granted it title, DOE has the right in accordance with the procedures in the DOE patent waiver regulations (10 CFR Part 784) to require the Contractor, an assignee, or exclusive licensee of a subject invention to grant a nonexclusive, partially exclusive, or exclusive license in any field of use to a responsible applicant or applicants, upon terms that are reasonable under the circumstances, and if the Contractor, assignee, or exclusive licensee refuses such a request, DOE has the right to grant such a license itself if it determines that--

(A) Such action is necessary because the Contractor or assignee has not taken, or is not expected to take within a reasonable time, effective steps to achieve practical application of the subject invention in such field of use;

(B) Such action is necessary to alleviate health or safety needs which are not reasonably satisfied by the Contractor, assignee, or their licensees;

(C) Such action is necessary to meet requirements for public use specified by Federal regulations and such requirements are not reasonably satisfied by the Contractor, assignee, or licensees; or

(D) Such action is necessary because the agreement required by paragraph (i) of this clause has neither been obtained nor waived or because a licensee of the exclusive right to use or sell any subject invention in the United States is in breach of such agreement.

(iii) The Contractor agrees to submit on request periodic reports no more frequently than annually on the utilization of a subject invention or on efforts at obtaining such utilization of a subject invention or on efforts at obtaining such utilization that are being made by the Contractor or its licensees or assignees. Such reports shall include information regarding the status of development, date of first commercial sale or use, gross royalties received by the Contractor, and such other data and information as DOE may reasonably specify. The Contractor also agrees to provide additional reports as may be requested by DOE in connection with any march-in proceedings undertaken by that agency in accordance with subparagraph (c)(1)(ii) of this clause. To the extent data or information supplied under this section is considered by the Contractor, its licensee, or assignee to be privileged and confidential and is so marked, the Department of Energy agrees that, to the extent permitted by law, it will not disclose such information to persons outside the Government.

(iv) The Contractor agrees, when licensing a subject invention, to arrange to avoid royalty charges on acquisitions involving Government funds, including funds derived through a Military Assistance Program of the Government or otherwise derived through the Government, to refund any amounts received as royalty charges on a subject invention in acquisitions for, or on behalf of, the Government, and to provide for such refund in any instrument transferring rights in the invention to any party.

(v) The Contractor agrees to provide for the Government's paid-up license pursuant to subparagraph (c)(1)(i) of this clause in any instrument transferring rights in a subject invention and to provide for the granting of licenses as required by subparagraph (c)(1)(ii) of this clause, and for the reporting of utilization information as required by subparagraph (c)(1)(iii) of this clause, whenever the instrument transfers principal or exclusive rights in a subject invention. (2) Nothing contained in this paragraph (c) shall be deemed to grant to the Government any rights with respect to any invention other than a subject invention.

(d) Minimum rights to the Contractor.

(1) The Contractor is hereby granted a revocable, nonexclusive, royalty-free license in each patent application filed in any country on a subject invention and any resulting patent in which the Government obtains title, unless the Contractor fails to disclose the subject invention within the times specified in subparagraph (e)(2) of this clause. The Contractor's license extends to its domestic subsidiaries and affiliates, if any, within the corporate structure of which the Contractor is a part and includes the right to grant sublicenses of the same scope to the extent the Contractor was legally obligated to do so at the time the contract was awarded. The license is transferable only with the approval of DOE except when transferred to the successor of that part of the Contractor's business to which the invention pertains.

(2) The Contractor's domestic license may be revoked or modified by DOE to the extent necessary to achieve expeditious practical application of the subject invention pursuant to an application for an exclusive license submitted in accordance with applicable provisions in 37 CFR Part 404 and agency licensing regulations. This license will not be revoked in that field of use or the geographical areas in which the Contractor has achieved practical applications and continues to make the benefits of the invention reasonably accessible to the public. The license in any foreign country may be revoked or modified at the discretion of DOE to the extent the Contractor, its licensees, or its domestic subsidiaries or affiliates have failed to achieve practical application in that foreign country.

(3) Before revocation or modification of the license, DOE will furnish the Contractor a written notice of its intention to revoke or modify the license, and the Contractor will be allowed 30 days (or such other time as may be authorized by DOE for good cause shown by the Contractor) after the notice to show cause why the license should not be revoked or modified. The Contractor has the right to appeal, in accordance with applicable agency licensing regulations and 37 CFR Part 404 concerning the licensing of Government-owned inventions, any decision concerning the revocation or modification of its license.

(4) The Contractor may request the right to acquire patent rights to a subject invention in any foreign country where the Government has elected not to secure such rights, subject to the conditions in subparagraphs (d)(4)(i) through (d)(4)(vii) of this clause. Such request must be made in writing to the Patent Counsel as

part of the disclosure required by subparagraph (e)(2) of this clause, with a copy to the DOE Contracting Officer. DOE approval, if given, will be based on a determination that this would best serve the national interest.

(i) The recipient of such rights, when specifically requested by DOE, and three years after issuance of a foreign patent disclosing the subject invention, shall furnish DOE a report stating:

(A) The commercial use that is being made, or is intended to be made, of said invention, and

(B) The steps taken to bring the invention to the point of practical application or to make the invention available for licensing.

(ii) The Government shall retain at least an irrevocable, nonexclusive, paid-up license to make, use, and sell the invention throughout the world by or on behalf of the Government (including any Government agency) and States and domestic municipal governments, unless the Secretary of Energy or designee determines that it would not be in the public interest to acquire the license for the States and domestic municipal governments.

(iii) If noted elsewhere in this contract as a condition of the grant of an advance waiver of the Government's title to inventions under this contract, or, if no advance waiver was granted but a waiver of the Government's title to an identified invention is granted pursuant to subparagraph (b)(2) of this clause upon a determination by the Secretary of Energy that it is in the Government's best interest, this license shall include the right of the Government to sublicense foreign governments pursuant to any existing or future treaty or agreement with such foreign governments.

(iv) Subject to the rights granted in subparagraphs (d)(1), (2), and (3) of this clause, the Secretary of Energy or designee shall have the right to terminate the foreign patent rights granted in this subparagraph (d)(4) in whole or in part unless the recipient of such rights demonstrates to the satisfaction of the Secretary of Energy or designee that effective steps necessary to accomplish substantial utilization of the invention have been taken or within a reasonable time will be taken.

(v) Subject to the rights granted in subparagraphs (d)(1), (2), and (3) of this clause, the Secretary of Energy or designee shall have the right, commencing four years after foreign patent rights are accorded under this subparagraph (d)(4), to require the granting of a nonexclusive or partially exclusive license to a responsible applicant or applicants, upon terms reasonable under the circumstances, and in appropriate circumstances to terminate said foreign patent rights in whole or in part, following a hearing upon notice thereof to the public, upon a petition by an interested person justifying such hearing:

(A) If the Secretary of Energy or designee determines, upon review of such material as he deems relevant, and after the recipient of such rights or other interested person has had the opportunity to provide such relevant and material information as the Secretary or designee may require, that such foreign patent rights have tended substantially to lessen competition or to result in undue market concentration in any section of the United States in any line of commerce to which the technology relates; or

(B) Unless the recipient of such rights demonstrates to the satisfaction of the Secretary of Energy or designee at such hearing that the recipient has taken effective steps, or within a reasonable time thereafter is expected to take such steps, necessary to accomplish substantial utilization of the invention.

(vi) If the contractor is to file a foreign patent application on a subject invention, the Government agrees, upon written request, to use its best efforts to withhold publication of such invention disclosures for such period of time as specified by Patent Counsel, but in no event shall the Government or its employees be liable for any publication thereof.

(vii) Subject to the license specified in subparagraphs (d)(1), (2), and (3) of this clause, the contractor or inventor agrees to convey to the Government, upon request, the entire right, title, and interest in any foreign country in which the contractor or inventor fails to have a patent application filed in a timely manner or decides not to continue prosecution or to pay any maintenance fees covering the invention. To avoid forfeiture of the patent application or patent, the contractor or inventor shall, not less than 60 days before the expiration period for any action required by any patent office, notify the Patent Counsel of such failure or decision, and deliver to the Patent Counsel, the executed instruments necessary for the conveyance specified in this paragraph.

(e) Invention identification, disclosures, and reports. (1) The Contractor shall establish and maintain active and effective procedures to assure that subject inventions are promptly identified and disclosed to Contractor personnel responsible for patent matters within 6 months of conception and/or first actual reduction to practice, whichever occurs first in the performance of work under this contract. These procedures shall include the maintenance of laboratory notebooks or equivalent records and other records as are reasonably necessary to document the conception and/or the first actual reduction to practice of subject inventions, and records that show that the procedures for identifying and disclosing the inventions are followed. Upon request, the Contractor shall furnish the Contracting Officer a description of such procedures for evaluation and for determination as to their effectiveness.

(2) The Contractor shall disclose each subject invention to the DOE Patent Counsel with a copy to the Contracting Officer within 2 months after the inventor discloses it in writing to Contractor personnel responsible for patent matters or, if earlier, within 6 months after the Contractor becomes aware that a subject invention has been made, but in any event before any on sale, public use, or publication of such invention known to the Contractor. The disclosure to DOE shall be in the form of a written report and shall identify the contract under which the invention was made and the inventor(s). It shall be sufficiently complete in technical detail to convey a clear understanding, to the extent known at the time of the disclosure, of the nature, purpose, operation, and physical, chemical, biological, or electrical characteristics of the invention. The disclosure shall also identify any publication, on sale, or public use of the invention and whether a manuscript describing the invention has been submitted for publication and, if so, whether it has been accepted for publication at the time of disclosure. In addition, after disclosure to DOE, the Contractor shall promptly notify Patent Counsel of the acceptance of any manuscript describing the invention for publication or of any on sale or public use planned by the Contractor. The report should also include any request for a greater rights determination in accordance with subparagraph (b)(2) of this clause. When an invention is disclosed to DOE under this paragraph, it shall be deemed to have been made in the manner specified in Sections (a)(1)

and (a)(2) of 42 U.S.C. 5908, unless the Contractor contends in writing at the time the invention is disclosed that it was not so made.

(3) The Contractor shall furnish the Contracting Officer the following:

(i) Interim reports every 12 months (or such longer period as may be specified by the Contracting Officer) from the date of the contract, listing all subject inventions during that period, and including a statement that all subject inventions have been disclosed (or that there are not such inventions), and that such disclosure has been made in accordance with the procedures required by paragraph (e)(1) of this clause.

(ii) A final report, within 3 months after completion of the contracted work listing all subject inventions or containing a statement that there were no such inventions, and listing all subcontracts at any tier containing a patent rights clause or containing a statement that there were no such subcontracts.

(4) The Contractor agrees to require, by written agreement, its employees, other than clerical and nontechnical employees, to disclose promptly in writing to personnel identified as responsible for the administration of patent matters and in a format suggested by the Contractor each subject invention made under contract in order that the Contractor can comply with the disclosure provisions of paragraph (c) of this clause, and to execute all papers necessary to file patent applications on subject inventions and to establish the Government's rights in the subject inventions. This disclosure format should require, as a minimum, the information required by subparagraph (e)(2) of this clause.

(5) The Contractor agrees, subject to FAR 27.302(j), that the Government may duplicate and disclose subject invention disclosures and all other reports and papers furnished or required to be furnished pursuant to this clause.

(f) Examination of records relating to inventions.

(1) The Contracting Officer or any authorized representative shall, until 3 years after final payment under this contract, have the right to examine any books (including laboratory notebooks), records, and documents of the Contractor relating to the conception or first actual reduction to practice of inventions in the same field of technology as the work under this contract to determine whether--

(i) Any such inventions are subject inventions;

(ii) The Contractor has established and maintains the procedures required by subparagraphs (e)(1) and (4) of this clause;

(iii) The Contractor and its inventors have complied with the procedures.

(2) If the Contracting Officer learns of an unreported Contractor invention which the Contracting Officer believes may be a subject invention, the Contractor may be required to disclose the invention to DOE for a determination of ownership rights.

(3) Any examination of records under this paragraph will be subject to appropriate conditions to protect the confidentiality of the information involved.

(g) Withholding of payment (NOTE: This paragraph does not apply to subcontracts).

(1) Any time before final payment under this contract, the Contracting Officer may, in the Government's interest, withhold payment until a reserve not exceeding \$50,000 or 5 percent of the amount of this contract, whichever is less, shall have been set aside if, in the Contracting Officer's opinion, the Contractor fails to--

(i) Convey to the Government, using a DOE-approved form, the title and/or rights of the Government in each subject invention as required by this clause.

(ii) Establish, maintain, and follow effective procedures for identifying and disclosing subject inventions pursuant to subparagraph (e)(1) of this clause;

(iii) Disclose any subject invention pursuant to subparagraph (e)(2) of this clause;

(iv) Deliver acceptable interim reports pursuant to subparagraph (e)(3)(i) of this clause; or

(v) Provide the information regarding subcontracts pursuant to subparagraph (h)(4) of this clause. (2) Such reserve or balance shall be withheld until the Contracting Officer has determined that the Contractor has rectified whatever deficiencies exist and has delivered all reports, disclosures, and other information required by this clause. (3) Final payment under this contract shall not be made before the Contractor delivers to the Contracting Officer all disclosures of subject inventions required by subparagraph (e)(2) of this clause, and acceptable final report pursuant to subparagraph (e)(3)(ii) of this clause, and the Patent Counsel has issued a patent clearance certification to the Contracting Officer.

(4) The Contracting Officer may decrease or increase the sums withheld up to the maximum authorized above. No amount shall be withheld under this paragraph while the amount specified by this paragraph is being withheld under other provisions of the contract. The withholding of any amount or the subsequent payment thereof shall not be construed as a waiver of any Government rights.

(h) Subcontracts.

(1) The contractor shall include the clause at 48 CFR 952.227-11 (suitably modified to identify the parties) in all subcontracts, regardless of tier, for experimental, developmental, demonstration, or research work to be performed by a small business firm or domestic nonprofit organization, except where the work of the subcontract is subject to an Exceptional Circumstances Determination by DOE. In all other subcontracts, regardless of tier, for experimental, developmental, demonstration, or research work, the contractor shall include this clause (suitably modified to identify the parties). The contractor shall not, as part of the consideration for awarding the subcontract, obtain rights in the subcontractor's subject inventions.

(2) In the event of a refusal by a prospective subcontractor to accept such a clause the Contractor--

(i) Shall promptly submit a written notice to the Contracting Officer setting forth the subcontractor's reasons for such refusal and other pertinent information that may expedite disposition of the matter; and

(ii) Shall not proceed with such subcontract without the written authorization of the Contracting Officer.

(3) In the case of subcontracts at any tier, DOE, the subcontractor, and Contractor agree that the mutual obligations of the parties created by this clause constitute a contract between the subcontractor and DOE with respect to those matters covered by this clause.

(4) The Contractor shall promptly notify the Contracting Officer in writing upon the award of any subcontract at any tier containing a patent rights clause by identifying the subcontractor, the applicable patent rights clause, the work to be performed under the subcontract, and the dates of award and estimated completion. Upon request of the Contracting Officer, the Contractor shall furnish a copy of such subcontract, and, no more frequently than annually, a listing of the subcontracts that have been awarded.

(5) The contractor shall identify all subject inventions of the subcontractor of which it acquires knowledge in the performance of this contract and shall notify the Patent Counsel, with a copy to the contracting officer, promptly upon identification of the inventions.

(i) Preference United States industry. Unless provided otherwise, no Contractor that receives title to any subject invention and no assignee of any such Contractor shall grant to any person the exclusive right to use or sell any subject invention in the United States unless such person agrees that any products embodying the subject invention will be manufactured substantially in the United States. However, in individual cases, the requirement may be waived by the Government upon a showing by the Contractor or assignee that reasonable but unsuccessful efforts have been made to grant licenses on similar terms to potential licensees that would be likely to manufacture substantially in the United States or that under the circumstances domestic manufacture is not commercially feasible.

(j) Atomic energy.

(1) No claim for pecuniary award of compensation under the provisions of the Atomic Energy Act of 1954, as amended, shall be asserted with respect to any invention or discovery made or conceived in the course of or under this contract.

(2) Except as otherwise authorized in writing by the Contracting Officer, the Contractor will obtain patent agreements to effectuate the provisions of subparagraph (e)(1) of this clause from all persons who perform any part of the work under this contract, except nontechnical personnel, such as clerical employees and manual laborers.

(k) Background Patents.

(1) Background Patent means a domestic patent covering an invention or discovery which is not a subject invention and which is owned or controlled by the Contractor at any time through the completion of this contract:

(i) Which the contractor, but not the Government, has the right to license to others without obligation to pay royalties thereon, and

(ii) Infringement of which cannot reasonably be avoided upon the practice of any specific process, method, machine, manufacture, or composition of matter (including relatively minor modifications thereof) which is a subject of the research, development, or demonstration work performed under this contract.

(2) The Contractor agrees to and does hereby grant to the Government a royalty-free, nonexclusive license under any background patent for purposes of practicing a subject of this contract by or for the Government in research, development, and demonstration work only.

(3) The Contractor also agrees that upon written application by DOE, it will grant to responsible parties, for purposes of practicing a subject of this contract, nonexclusive licenses under any background patent on terms that are reasonable under the circumstances. If, however, the Contractor believes that exclusive rights are necessary to achieve expeditious commercial development or utilization, then a request may be made to DOE for DOE approval of such licensing by the Contractor.

(4) Notwithstanding subparagraph (k)(3) of this clause, the contractor shall not be obligated to license any background patent if the Contractor demonstrates to the satisfaction of the Secretary of Energy or designee that:

(i) a competitive alternative to the subject matter covered by said background patent is commercially available or readily introducible from one or more other sources; or

(ii) the Contractor or its licensees are supplying the subject matter covered by said background patent in sufficient quantity and at reasonable prices to satisfy market needs, or have taken effective steps or within a reasonable time are expected to take effective steps to so supply the subject matter. l) Publication. It is recognized that during the course of the work under this contract, the Contractor or its employees may from time to time desire to release or publish information regarding scientific or technical developments conceived or first actually reduced to practice in the course of or under this contract. In order that public disclosure of such information will not adversely affect the patent interests of DOE or the Contractor, patent approval for release of publication shall be secured from Patent Counsel prior to any such release or publication.

(m) Forfeiture of rights in unreported subject inventions.

(1) The Contractor shall forfeit and assign to the Government, at the request of the Secretary of Energy or designee, all rights in any subject invention which the Contractor fails to report to Patent Counsel within six months after the time the Contractor:

(i) Files or causes to be filed a United States or foreign patent application thereon; or

(ii) Submits the final report required by subparagraph (e)(2)(ii) of this clause, whichever is later.

(2) However, the Contractor shall not forfeit rights in a subject invention if, within the time specified in subparagraph (m)(1) of this clause, the Contractor:

(i) Prepares a written decision based upon a review of the record that the invention was neither conceived nor first actually reduced to practice in the course of or under the contract and delivers the decision to Patent Counsel, with a copy to the Contracting Officer; or

(ii) Contending that the invention is not a subject invention, the Contractor nevertheless discloses the invention and all facts pertinent to this contention to the Patent Counsel, with a copy to the Contracting Officer; or

(iii) Establishes that the failure to disclose did not result from the Contractor's fault or negligence.

(3) Pending written assignment of the patent application and patents on a subject invention determined by the Secretary of Energy or designee to be forfeited (such determination to be a final decision under the Disputes clause of this contract), the Contractor shall be deemed to hold the invention and the patent applications and patents pertaining thereto in trust for the Government. The forfeiture provision of this paragraph (m) shall be in addition to and shall not supersede other rights and remedies which the Government may have with respect to subject inventions.

3.10 FAR 52.227-14 RIGHTS IN DATA -GENERAL. (JUN 1987) WITH ALTERNATE V (JUN 1987) AS AMENDED BY DEAR 927.409 (JAN 1999)

(a) Definitions.

(1) "Computer databases," as used in this clause, means a collection of data in a form capable of, and for the purpose of, being stored in, processed, and operated on by a computer. The term does not include computer software.

(2) "Computer software," as used in this clause, means (i) computer programs which are data comprising a series of instructions, rules, routines, or statements, regardless of the media in which recorded, that allow or cause a computer to perform a specific operation or series of operations and (ii) data comprising source code listings, design details, algorithms, processes, flow charts, formulae, and related material that would enable the computer program to be produced, created, or compiled. The term does not include computer data bases.

(3) "Data," as used in this clause, means recorded information, regardless of form or the media on which it may be recorded. The term includes technical data and computer software. For the purposes of this clause, the term does not include data incidental to the administration of this contract, such as financial, administrative, cost and pricing, or management information.

(4) "Form, fit, and function data," as used in this clause, means data relating to items, components, or processes that are sufficient to enable physical and functional interchangeability, as well as data identifying source, size, configuration, mating, and attachment characteristics, functional characteristics, and performance requirements; except that for computer software it means data identifying source, functional characteristics, and performance requirements but specifically excludes the source code, algorithm, process, formulae, and flow charts of the software.

(5) "Limited rights data," as used in this clause, means data, other than computer software, developed at private expense that embody trade secrets or are commercial or financial and confidential or privileged. The Government's rights to use, duplicate, or disclose limited rights data are as set forth in the Limited Rights Notice of subparagraph (g)(2) of this section if included in this clause.

(6) "Restricted computer software," as used in this clause, means computer software developed at private expense and that is a trade secret; is commercial or financial and is confidential or privileged; or is published copyrighted computer software, including minor modifications of any such computer software. The Government's rights to use, duplicate,

or disclose restricted computer software are as set forth in the Restricted Rights Notice of subparagraph (g)(3) of this section if included in this clause.

(7) "Technical data," as used in this clause, means recorded data, regardless of form or characteristic, that are of a scientific or technical nature. Technical data does not include computer software, but does include manuals and instructional materials and technical data formatted as a computer data base.

(8) "Unlimited rights," as used in this clause, means the rights of the Government to use, disclose, reproduce, prepare derivative works, distribute copies to the public, including by electronic means, and perform publicly and display publicly, in any manner, including by electronic means, and for any purpose whatsoever, and to have or permit others to do so.

(b) Allocation of rights.

(1) Except as provided in paragraph (c) of this clause regarding copyright, the Government shall have unlimited rights in -

(i) Data first produced in the performance of this contract;

(ii) Form, fit, and function data delivered under this contract;

(iii) Data delivered under this contract (except for restricted computer software) that constitute manuals or instructional and training material for installation, operation, or routine maintenance and repair of items, components, or processes delivered or furnished for use under this contract; and

(iv) All other data delivered under this contract unless provided otherwise for limited rights data or restricted computer software in accordance with paragraph (g) of this clause.

(2) The Contractor shall have the right to -

(i) Use, release to others, reproduce, distribute, or publish any data first produced or specifically used by the Contractor in the performance of this contract, unless provided otherwise in paragraph (d) of this clause;

(ii) Protect from unauthorized disclosure and use those data which are limited rights data or restricted computer software to the extent provided in paragraph (g) of this clause;

(iii) Substantiate use of, add or correct limited rights, restricted rights, or copyright notices and to take other appropriate action, in accordance with paragraphs (e) and (f) of this clause; and

(iv) Establish claim to copyright subsisting in data first produced in the performance of this contract to the extent provided in subparagraph (c)(1) of this clause.

(c) Copyright -

(1) Data first produced in the performance of this contract. Unless provided otherwise in paragraph (d) of this clause, the Contractor may establish, without prior approval of the Contracting Officer, claim to copyright subsisting in scientific and technical articles based on or containing data first produced in the performance of this contract and published in academic, technical or professional journals, symposia proceedings or similar works. The prior, express written permission of the Contracting Officer is required to establish claim

to copyright subsisting in all other data first produced in the performance of this contract. When claim to copyright is made, the Contractor shall affix the applicable copyright notices of 17 U.S.C. 401 or 402 and acknowledgment of Government sponsorship (including contract number) to the data when such data are delivered to the Government, as well as when the data are published or deposited for registration as a published work in the U.S. Copyright Office. For data other than computer software the Contractor grants to the Government, and others acting on its behalf, a paid nonexclusive, irrevocable worldwide license in such copyrighted data to reproduce, prepare derivative works, distribute copies to the public, and perform publicly and display publicly, by or on behalf of the Government. For computer software, the Contractor grants to the Government and others acting in its behalf, a paid nonexclusive, irrevocable worldwide license in such copyrighted computer software to reproduce, prepare derivative works, and perform publicly and display publicly by or on behalf of the Government.

(2) Data not first produced in the performance of this contract. The Contractor shall not, without prior written permission of the Contracting Officer, incorporate in data delivered under this contract any data not first produced in the performance of this contract and which contains the copyright notice of 17 U.S.C. 401 or 402, unless the Contractor identifies such data and grants to the Government, or acquires on its behalf, a license of the same scope as set forth in subparagraph (c)(1) of this clause; provided, however, that if such data are computer software the Government shall acquire a copyright license as set forth in subparagraph (g)(3) of this clause if included in this contract or as otherwise may be provided in a collateral agreement incorporated in or made part of this contract.

(3) Removal of copyright notices. The Government agrees not to remove any copyright notices placed on data pursuant to this paragraph (c), and to include such notices on all reproductions of the data.

(d) Release, publication and use of data.

(1) The Contractor shall have the right to use, release to others, reproduce, distribute, or publish any data first produced or specifically used by the Contractor in the performance of this contract, except to the extent such data may be subject to the Federal export control or national security laws or regulations, or unless otherwise provided in this paragraph of this clause or expressly set forth in this contract.

(2) The Contractor agrees that to the extent it receives or is given access to data necessary for the performance of this contract which contain restrictive markings, the Contractor shall treat the data in accordance with such markings unless otherwise specifically authorized in writing by the Contracting Officer.

(3) The Contractor agrees not to assert copyright in computer software first produced in the performance of this contract without prior written permission of the DOE Patent Counsel assisting the contracting activity. When such permission is granted, the Patent Counsel shall specify appropriate terms, conditions, and submission requirements to assure utilization, dissemination, and commercialization of the data. The Contractor, when requested, shall promptly deliver to Patent Counsel a duly executed and approved instrument fully confirmatory of all rights to which the Government is entitled.

(e) Unauthorized marking of data.

(1) Notwithstanding any other provisions of this contract concerning inspection or acceptance, if any data delivered under this contract are marked with the notices specified in subparagraph (g)(2) or (g)(3) of this clause and use of such is not authorized by this clause, or if such data bears any other restrictive or limiting markings not authorized by this contract, the Contracting Officer may at any time either return the data to the

Contractor, or cancel or ignore the markings. However, the following procedures shall apply prior to canceling or ignoring the markings.

(i) The Contracting Officer shall make written inquiry to the Contractor affording the Contractor 30 days from receipt of the inquiry to provide written justification to substantiate the propriety of the markings;

(ii) If the Contractor fails to respond or fails to provide written justification to substantiate the propriety of the markings within the 30-day period (or a longer time not exceeding 90 days approved in writing by the Contracting Officer for good cause shown), the Government shall have the right to cancel or ignore the markings at any time after said period and the data will no longer be made subject to any disclosure prohibitions.

(iii) If the Contractor provides written justification to substantiate the propriety of the markings within the period set in subdivision (e)(1)(i) of this clause, the Contracting Officer shall consider such written justification and determine whether or not the markings are to be canceled or ignored. If the Contracting Officer determines that the markings are authorized, the Contractor shall be so notified in writing. If the Contracting Officer determines, with concurrence of the head of the contracting activity, that the markings are not authorized, the Contracting Officer shall furnish the Contractor a written determination, which determination shall become the final agency decision regarding the appropriateness of the markings unless the Contractor files suit in a court of competent jurisdiction within 90 days of receipt of the Contracting Officer's decision. The Government shall continue to abide by the markings under this subdivision (e)(1)(iii) until final resolution of the matter either by the Contracting Officer's determination becoming final (in which instance the Government shall thereafter have the right to cancel or ignore the markings at any time and the data will no longer be made subject to any disclosure prohibitions), or by final disposition of the matter by court decision if suit is filed.

(2) The time limits in the procedures set forth in subparagraph (e)(1) of this clause may be modified in accordance with agency regulations implementing the Freedom of Information Act (5 U.S.C. 552) if necessary to respond to a request thereunder.

(3) This paragraph (e) does not apply if this contract is for a major system or for support of a major system by a civilian agency other than NASA and the U.S. Coast Guard agency subject to the provisions of Title III of the Federal Property and Administrative Services Act of 1949.

(4) Except to the extent the Government's action occurs as the result of final disposition of the matter by a court of competent jurisdiction, the Contractor is not precluded by this paragraph (e) from bringing a claim under the Contract Disputes Act, including pursuant to the Disputes clause of this contract, as applicable, that may arise as the result of the Government removing or ignoring authorized markings on data delivered under this contract.

(f) Omitted or incorrect markings.

(1) Data delivered to the Government without either the limited rights or restricted rights notice as authorized by paragraph (g) of this clause, or the copyright notice required by paragraph (c) of this clause, shall be deemed to have been furnished with unlimited rights, and the Government assumes no liability for the disclosure, use, or reproduction of such data. However, to the extent the data has not been disclosed without restriction outside the Government, the Contractor may request, within 6 months (or a longer time approved by the Contracting Officer for good cause shown) after delivery of such data, permission to have notices placed on qualifying data at the Contractor's expense, and the Contracting Officer may agree to do so if the Contractor

- (i) Identifies the data to which the omitted notice is to be applied;
- (ii) Demonstrates that the omission of the notice was inadvertent;
- (iii) Establishes that the use of the proposed notice is authorized; and
- (iv) Acknowledges that the Government has no liability with respect to the disclosure, use, or reproduction of any such data made prior to the addition of the notice or resulting from the omission of the notice.

(2) The Contracting Officer may also (i) permit correction at the Contractor's expense of incorrect notices if the Contractor identifies the data on which correction of the notice is to be made, and demonstrates that the correct notice is authorized, or (ii) correct any incorrect notices.

(g) Protection of limited rights data and restricted computer software.

(1) When data other than that listed in subdivisions (b)(1)(i), (ii), and (iii) of this clause are specified to be delivered under this contract and qualify as either limited rights data or restricted computer software, if the Contractor desires to continue protection of such data, the Contractor shall withhold such data and not furnish them to the Government under this contract. As a condition to this withholding, the Contractor shall identify the data being withheld and furnish form, fit, and function data in lieu thereof. Limited rights data that are formatted as a computer data base for delivery to the Government are to be treated as limited rights data and not restricted computer software.

(2) (Reserved)

(3) (Reserved)

(h) Subcontracting. The Contractor has the responsibility to obtain from its subcontractors all data and rights therein necessary to fulfill the Contractor's obligations to the Government under this contract. If a subcontractor refuses to accept terms affording the Government such rights, the Contractor shall promptly bring such refusal to the attention of the Contracting Officer and not proceed with subcontract award without further authorization.

(i) Relationship to patents. Nothing contained in this clause shall imply a license to the Government under any patent or be construed as affecting the scope of any license or other right otherwise granted to the Government.

(j) The Contractor agrees, except as may be otherwise specified in this contract for specific data items listed as not subject to this paragraph, that the Contracting Officer or an authorized representative may, up to three years after acceptance of all items to be delivered under this contract, inspect at the Contractor's facility any data withheld pursuant to paragraph (g)(1) of this clause, for purposes of verifying the Contractor's assertion pertaining to the limited rights or restricted rights status of the data or for evaluating work performance. Where the Contractor whose data are to be inspected demonstrates to the Contracting Officer that there would be a possible conflict of interest if the inspection were made by a particular representative, the Contracting Officer shall designate an alternate inspector.

3.11 52.227-16 ADDITIONAL DATA REQUIREMENTS. (JUN 1987)

(a) In addition to the data (as defined in the clause at 52.227-14, Rights in Data - General clause or other equivalent included in this contract) specified elsewhere in this contract to be delivered, the Contracting Officer may, at any time during contract performance or within a period of 3 years after acceptance of all items to be delivered

under this contract, order any data first produced or specifically used in the performance of this contract.

(b) The Rights in Data - General clause or other equivalent included in this contract is applicable to all data ordered under this Additional Data Requirements clause. Nothing contained in this clause shall require the Contractor to deliver any data the withholding of which is authorized by the Rights in Data - General or other equivalent clause of this contract, or data which are specifically identified in this contract as not subject to this clause.

(c) When data are to be delivered under this clause, the Contractor will be compensated for converting the data into the prescribed form, for reproduction, and for delivery.

(d) The Contracting Officer may release the Contractor from the requirements of this clause for specifically identified data items at any time during the 3-year period set forth in paragraph (a) of this clause.

3.12 52.227-23 RIGHTS TO PROPOSAL DATA (TECHNICAL). (JUN 1987)

Except for data contained on pages [To Be Determined], it is agreed that as a condition of award of this contract, and notwithstanding the conditions of any notice appearing thereon, the Government shall have unlimited rights (as defined in the "Rights in Data - General" clause contained in this contract) in and to the technical data contained in the proposal dated [To Be Determined], upon which this contract is based.

SECTION IV -- LIST OF ATTACHMENTS

4.1 LIST OF ATTACHMENTS (JAN 1999)

Attachment A -- Statement of Project Objectives

Attachment B -- Federal Assistance Reporting Checklist

Attachment C -- Budget Page(s)

Attachment D -- Recipient Acquired Property

4.2 ATTACHMENT A -- STATEMENT OF PROJECT OBJECTIVES (JAN 1999)

The Statement of Project Objectives will be inserted on this page upon award.

The Applicant must prepare the Statement of Project Objectives and include it as an Appendix to Volume II - Technical Application. Instructions for preparation of this document can be found in Section VI.

A. Objectives

B. Scope of Project

C. Tasks to Be Performed

D. Phase I -- Concept Definition and Resolution of Barrier Issues

Task 1 -- Program Management

Task 2 -- NEPA

Task 3 -- Concept Identification

Subtask 3.1 -- System Definition

Subtask 3.2 -- Economic Evaluation

Subtask 3.3 -- Identification and Resolution of operational Issues

Phase II -- Detailed Design and Cost Estimate of Proof-Of-Concept System

Task 4 -- Detailed Design

Task 5 -- Cost Estimate

Phase III -- Fabrication and Proof-Of-Concept Testing

Task 6 -- Fabrication

Task 7 -- System Shakedown

Task 8 -- Testing

E. Deliverables

The Recipient shall provide reports in accordance with the enclosed Federal Assistance Reporting Checklist and the instructions accompanying the Checklist. In addition to the reports identified on the Reporting Checklist, the Recipient shall provide the following:

[To Be Determined]

F. Briefings/Technical Presentations

FEDERAL ASSISTANCE REPORTING CHECKLIST

1. Awardee: [To Be Determined]	2. Identification Number: DE-PS26-00NT40779																																																																		
3. Report Submission Address: <i>The requested quantity of all required report deliverables shall be submitted to the following address:</i> <div style="text-align: center;"> NETL AAD Document Control Bldg. 921 U.S. Department of Energy National Energy Technology Laboratory P.O. Box 10940 Pittsburgh, PA 15236-0940 </div>																																																																			
4. Planning and Reporting Requirements:																																																																			
A. Program/Project Management <input type="checkbox"/> Federal Assistance Milestone Plan <input type="checkbox"/> Milestone Log <input type="checkbox"/> Federal Assistance Management Summary Report <input type="checkbox"/> Federal Assistance Program/Project Status Report <input type="checkbox"/> Financial Status Report <input type="checkbox"/> Federal Cash Transaction Report B. Technical (One paper copy and one PDF electronic file copy) <input type="checkbox"/> Technical Progress Report <input type="checkbox"/> Topical Report <input type="checkbox"/> Final Report C. Environmental <input type="checkbox"/> Hazardous Substance Plan <input type="checkbox"/> Hazardous Waste Report <input type="checkbox"/> Environmental Compliance Plan <input type="checkbox"/> Environmental Monitoring Plan <input type="checkbox"/> Environmental Status Report D. Property <input type="checkbox"/> Annual Report of Property in the Custody of Contractors <input type="checkbox"/> High Risk Property Report <input type="checkbox"/> Report of Termination or Completion Inventory E. Exception <input type="checkbox"/> Conference Record <input type="checkbox"/> Hot Line Report <input type="checkbox"/> Journal Articles/Conference Papers and Proceedings <input type="checkbox"/> Software <input type="checkbox"/> Other _____	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Form No.</th> <th style="text-align: center;">Freq.</th> <th style="text-align: center;">Number of Copies</th> </tr> </thead> <tbody> <tr> <td>DOE F 4600.3</td> <td style="text-align: center;">O</td> <td style="text-align: center;">2</td> </tr> <tr> <td>DOE F 4600.3A</td> <td style="text-align: center;">M</td> <td style="text-align: center;">2</td> </tr> <tr> <td>DOE F 4600.5</td> <td style="text-align: center;">M</td> <td style="text-align: center;">2</td> </tr> <tr> <td>DOE F 4600.6</td> <td style="text-align: center;">M</td> <td style="text-align: center;">2</td> </tr> <tr> <td>SF-269 or SF-269A</td> <td style="text-align: center;">M</td> <td style="text-align: center;">3</td> </tr> <tr> <td>SF-272</td> <td></td> <td></td> </tr> <tr> <td>None</td> <td style="text-align: center;">Q</td> <td style="text-align: center;">2</td> </tr> <tr> <td>None</td> <td style="text-align: center;">A</td> <td style="text-align: center;">2</td> </tr> <tr> <td>None</td> <td style="text-align: center;">F</td> <td style="text-align: center;">2</td> </tr> <tr> <td>None</td> <td></td> <td></td> </tr> <tr> <td>None</td> <td style="text-align: center;">O</td> <td style="text-align: center;">3</td> </tr> <tr> <td>None</td> <td style="text-align: center;">F</td> <td style="text-align: center;">3</td> </tr> <tr> <td>None</td> <td></td> <td></td> </tr> <tr> <td>None</td> <td></td> <td></td> </tr> <tr> <td>None</td> <td></td> <td></td> </tr> <tr> <td>F 580.1-8</td> <td style="text-align: center;">A</td> <td style="text-align: center;">1</td> </tr> <tr> <td>F 4440.5</td> <td></td> <td></td> </tr> <tr> <td>SF-1428 or SF-120</td> <td style="text-align: center;">FC</td> <td style="text-align: center;">1</td> </tr> <tr> <td>None</td> <td></td> <td></td> </tr> <tr> <td>None</td> <td style="text-align: center;">A</td> <td style="text-align: center;">2</td> </tr> <tr> <td>None</td> <td style="text-align: center;">A</td> <td style="text-align: center;">2</td> </tr> </tbody> </table>	Form No.	Freq.	Number of Copies	DOE F 4600.3	O	2	DOE F 4600.3A	M	2	DOE F 4600.5	M	2	DOE F 4600.6	M	2	SF-269 or SF-269A	M	3	SF-272			None	Q	2	None	A	2	None	F	2	None			None	O	3	None	F	3	None			None			None			F 580.1-8	A	1	F 4440.5			SF-1428 or SF-120	FC	1	None			None	A	2	None	A	2
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5. Frequency Codes and Due Dates: A - As required; for due date of Hot Line Report, Property Reports, and all other reports, see attached text. C - Federal Assistance change/revision, within 15 calendar days after event. F - Final; within ninety (90) calendar days after the project period ends. FC - Final (End of Effort - No Draft); end of effort. M - Monthly; within twenty-five (25) calendar days after end of the report period. O - Once after award; within thirty (30) calendar days after award. Q - Quarterly; within thirty (30) calendar days after end of the calendar quarter or portion thereof. S - Semiannually; within thirty (30) calendar days after end of program half-year. Y - Yearly; 90 calendar days after the end of calendar year.																																																																			
6. Special Instructions: The forms identified in the checklist are available at http://www.netl.doe.gov/business/forms/forms.html . Alternate formats are acceptable provided the contents remain consistent with the form. All technical reports submitted to the DOE must be accompanied by a completed and signed <u>NETL F 2050.4</u> addressing patent information.																																																																			

4.3 GENERAL INSTRUCTIONS FOR THE PREPARATION AND SUBMISSION OF REPORTS (MAY 1999)

The Recipient shall prepare and submit (postage prepaid) the plans and reports indicated on the "Federal Assistance Reporting Checklist" to the addressee identified on the checklist. The level of detail the Recipient provides in the plans and reports shall be commensurate with the scope and complexity of the effort and shall be as delineated in the guidelines and instructions contained herein. The prime Recipient shall be responsible for acquiring data from any contractors or subrecipients to ensure that data submitted are compatible with the data elements which prime Recipients are required to submit to DOE.

4.4 FEDERAL ASSISTANCE MILESTONE PLAN (DOE F 4600.3) AND MILESTONE LOG (DOE F 4600.3A) (MAY 1999)

The milestone plan is used as a planning tool, establishing the time schedule for accomplishing the planned work. Usually, it is accompanied by the DOE F 4600.3A, "Milestone Log." The Milestone Plan portrays the major milestones of the project in bar chart format. The purpose of the plan is to establish the Recipient's time schedule for accomplishing planned events and milestones. It covers the life of the project and is to be organized by major project activities, such as those performed at work breakdown structure Level 2. Intermediate events and critical milestones are further identified in an attached "milestone log" and include the identification number, descriptive name of the event or milestone, and the scheduled date of completion.

4.5 FEDERAL ASSISTANCE MANAGEMENT SUMMARY REPORT (DOE F 4600.5) (MAY 1999)

This report is a graphic presentation of costs and milestone status that provides rapid visual analysis and trend forecasting. The funding levels should represent all available resources. The Recipient provides summary cumulative cost and activity data for each reporting period. (Refer to the back of the form for more detailed instructions.)

4.6 FEDERAL ASSISTANCE PROGRAM/PROJECT STATUS REPORT (FORM 4600.6) (MAY 1999)

This report is a concise narrative describing the current status of the effort. The report allows Recipients to communicate developments, achievements, changes and problems. The award Recipient enters a brief narrative discussion of the following topics: approach changes; performance variances, accomplishments, or problems; open times; and status assessment and forecast. Each of these topics is addressed, as appropriate, for a given reporting period and the report is submitted periodically, as required, during the life of the project.

4.7 FINANCIAL STATUS REPORT (STANDARD FORM 269 OR 269A) (MAY 1999)

This report is used for the Recipient to provide regular periodic accounting of project funds expended. The accounting may be on either a cash or accrual basis. Actual total expenditures and obligations incurred, but not paid, are reported for each reporting period for each major activity. They should correlate with those identified on the "Federal Assistance Milestone Plan" when the "Federal Assistance Milestone Plan" is required. Provision is made to identify the Federal and non-Federal share of project outlays for each identified activity.

4.8 TECHNICAL REPORTS (DEC 1999)

CAUTION: Technical reports SHALL NOT include limited rights data (such as restricted, proprietary or patentable information). Limited Rights Data shall be submitted in a separate proprietary appendix to the technical report. This appendix SHALL NOT be submitted in an electronic format but rather submitted in ONE ORIGINAL AND THREE (3) PAPER COPIES along with the paper version of the sanitized technical report deliverable. The appendix shall be referenced in, but not included in, the sanitized technical report deliverable under the contract. In accordance with FAR 52.227-14, Rights in Data-General, the appendix must be appropriately marked and identified.

All TECHNICAL REPORTS submitted to the DOE MUST be accompanied by a completed and signed NETL F 2050.4, addressing patent information.

4.9 TECHNICAL PROGRESS REPORT (ANNUAL, QUARTERLY, AND SEMI-ANNUAL) (MAY 1999)

The body of the report should contain a full account of progress, problems encountered, plans for the next reporting period, and an assessment of the prospects for future progress.

The Technical Progress Report should include sufficient detail to allow the work to be reproduced by others. Results and reduced data shall be presented together with a discussion of the relevance of the findings. When experimental systems and/or procedures are being utilized for the first time, they shall be described in detail. This description shall contain detailed information on equipment and procedures utilized, as well as providing a rationale for their use. All data reduction and transformation methods shall be fully documented. For every fourth calendar quarter for quarterly reports or every second half year for semi-annual reports, the report should be expanded to provide for detailed information on the results of the past year, problems encountered, significant accomplishments, listing of publications, presentations, and approaches to be taken the following year.

Informational items in technical progress reports shall include:

Experimental Apparatus -- A comprehensive description, including dimensioned drawings or sketches, of the apparatus and associated diagnostic measurement equipment employed to perform the experimental research.

Experimental and Operating Data -- All experimental data acquired during the course of research including detailed characterization of the sample materials subjected to experimentation.

Data Reduction -- A complete description of the methods employed to transform raw measured data into a form usable for interpretation along with any assumptions or restrictions inherent in the method and the resultant reduced data.

Hypothesis and Conclusions -- Logic for drawing conclusions or developing hypotheses shall be clearly stated along with applicable assumptions or restrictions.

4.10 FINAL TECHNICAL REPORT (MAY 1999)

The Final Report shall document and summarize all work performed during the award period in a comprehensive manner. It shall also present findings and/or conclusions produced as a consequence of this work. This report shall not merely be a compilation of information contained in subsequent quarterly, or other technical reports, but shall present that information in an integrated fashion, and shall be augmented with findings and conclusions drawn from the research as a whole.

The Recipient shall deliver a draft copy of the final report thirty (30) days after completion of the project period. The Government shall be allowed thirty (30) days to review the draft copy and to notify the Recipient, in writing, of approval or recommended changes. If the Government does not approve or recommend changes within thirty (30) days of receipt of the draft copy, the report shall be deemed approved. The approved final report is due ninety (90) days after completion of the project period.

4.11 TOPICAL REPORT (MAY 1999)

These reports usually provide a comprehensive statement of the technical results of the work performed for a specific task or subtask of the Statement of Project Objectives, or detail

significant new scientific or technical advances. If required, DOE shall review and approve the report outline prior to submission of the report.

4.12 GUIDELINES FOR ORGANIZATION OF TECHNICAL REPORTS (DEC 1999)

The following sections should be included (as appropriate) in technical reports in the sequence shown. Any section denoted by an asterisk is required in all technical reports.

TITLE PAGE* - The Title Page of the report itself must contain the following information in the following sequence:

Report Title
Type of Report (Quarterly, Semi-Annual, Annual, Topical, Final)
Reporting Period Start Date
Reporting Period End Date
Principal Author(s)
Date Report was Issued (Month [spelled out] and Year [4 digits])
DOE Award Number (e.g., DE-FG26-99NT12345) and if appropriate, task number
Name and Address of Submitting Organization (This section should also contain the name and address of significant subcontractors or subrecipients who participated in the production of the report.)

DISCLAIMER* - The Disclaimer must follow the title page, and must contain the following paragraph:

"This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof."

ABSTRACT* - Should be a brief, concise summary of the report.

TABLE OF CONTENTS*

LIST(S) OF GRAPHICAL MATERIALS

INTRODUCTION

EXECUTIVE SUMMARY - This should be a well organized summary that highlights the important accomplishments of the research during the reporting period. It should be no less than one page and no more than two pages in length, and should be single spaced. This summary must be more comprehensive than the traditional "abstract."

EXPERIMENTAL* - This should describe, or reference all experimental methods being used for the research. It should also provide detail about materials and equipment being used. Standard methods can be referenced to the appropriate literature, where details can be obtained. Equipment should be described only if it is not standard, or if information is not available thru the literature or other reference publications.

RESULTS AND DISCUSSION* - It is extremely important that this section includes enough relevant data, especially statistical data, to allow the project manager to justify the conclusions. With the relevant data, explain how the data was interpreted and how it relates to the original purpose of the research. Be concise in the discussion on how this research effort solved or contributed to solving the original problem.

CONCLUSION* - The conclusion should not simply reiterate what was already included in the "Results and Discussion" section. It should, however, summarize what has already been presented, and include any logical implications of how the successes are relevant to technology development in the future. This is extremely important, since "relevancy" continues to be a criteria of the program.

REFERENCES*

BIBLIOGRAPHY

LIST OF ACRONYMS AND ABBREVIATIONS

APPENDICES (IF NECESSARY)

Company Names and Logos -- Except as indicated above, company names, logos, or similar material should not be incorporated into reports.

Copyrighted Material -- Copyrighted material should not be submitted as part of a report unless written authorization to use such material is received from the copyright owner and is submitted to DOE with the report.

Measurement Units -- All reports to be delivered under this instrument shall use the SI Metric System of Units as the primary units of measure. When reporting units in all reports, primary SI units shall be followed by their U.S. Customary Equivalents in parentheses ().

The Recipient shall insert the text of this clause, including this paragraph, in all subcontracts under this award.

Note: SI is an abbreviation for "Le Systeme International d'Unites."

4.13 ELECTRONIC MEDIA STANDARD FOR PREPARATION OF TECHNICAL REPORTS (DEC 1999)

FILE FORMAT

Production of high-quality, electronic documents is dependent on the quality of the input that is provided. Thus, the Recipient shall submit one good quality paper copy using either permanent or alkaline paper plus an electronic version of each technical report.

ELECTRONIC REPORTS SHALL BE SUBMITTED IN THE ADOBE ACROBAT PORTABLE DOCUMENT FORMAT (PDF). ELECTRONIC REPORTS SUBMITTED IN A FORMAT OTHER THAN ADOBE WILL BE RETURNED AND THE REPORT CONSIDERED DELINQUENT.

Each report shall be an integrated file that contains all text, tables, diagrams, photographs, schematics, graphs, and charts.

SUBMISSION FORMAT

The electronic file(s) shall be submitted via diskette or CD-ROM. Diskettes or CD-ROMs must be labeled as follows:

DOE Award Number
Type/Frequency of Report(s)

Reporting Period (if applicable)
Name of submitting organization
Name, phone number and fax number of preparer

Diskettes -- Diskettes must be 3.5" double-sided, high-density (1.4 M Byte capacity). If file compression software is used to transmit a PDF file spanning more than one diskette, PKZIP from PKWare, Inc., is the required compression software. State the number of diskettes in the set (e.g., 1/3).

CD-ROM -- The electronic file(s) may be submitted on an ISO9660-format CD-ROM.

FILE NAMING

In naming the electronic file, the Recipient shall use the standard eight-character naming convention for the main file name, and the three character extension applicable to the software use, e.g., .pdf for Adobe.

For the main file name, the first five characters are the last five digits from the award number; e.g., for Award Number DE-FG26-97NT12345, the first five characters are 12345.

The next character represents the technical report and will always be designated as "R".

The remaining two characters indicate the chronological number of the particular type of report; e.g., Quarterly Technical Progress Reports for a 5-year award are numbered R01 through R20. Thus, the main file name for the sixth Quarterly Technical Progress Report under Award No. DE-FG26-99NT12345 would be 12345R06.PDF. If monthly, quarterly, annual, and a final technical report are required, the numbers would run from R01 through R86 (60 monthly reports, 20 quarterly reports, 5 annual reports, and 1 final report).

4.14 ENVIRONMENTAL (DEC 1999)

In response to the requirements of the National Environmental Policy Act of 1969 (NEPA) and other related environmental statutes, the National Energy Technology Laboratory (NETL) requires the submission of various documents that assess the environmental aspects and projected impacts of all of its proposed actions. These documents may include the following: (1) Hazardous Substance Plan, (2) Hazardous Waste Report, (3) Environmental Compliance Plan, (4) Environmental Monitoring Plan, and (5) Environmental Status Reports.

The environmental information provided in these documents will enable NETL to fulfill its responsibilities under NEPA (additional information about the requirements of the National Environmental Policy Act can be found in the DOE NEPA Compliance Guide and 10 CFR 1021) and to monitor the Recipient's compliance with other environmental regulations. The implementation of any task associated with a proposed action will be dependent upon DOE completing necessary NEPA documentation. Therefore, to minimize the risk of project delays, it is imperative that these reports be submitted in a timely manner.

The information contained herein specifies the basic environmental requirements for this award, but it is not to be interpreted as containing all necessary information for any given project. Likewise, certain aspects of the requirements may not be applicable. Accordingly, the level of information provided should be sufficient for DOE to assess the environmental implications of the proposed action.

4.15 HAZARDOUS SUBSTANCE PLAN (MAY 1999)

The Recipient shall submit a Hazardous Substance Plan not later than thirty (30) days after initial award. The Plan shall specifically identify each Hazardous Substance (as defined under 40 CFR

261, Subpart D, entitled Lists of Hazardous Wastes) anticipated to be purchased, utilized or generated in the performance of this award. For each such Hazardous Substance identified, the Plan shall specifically provide the following information:

- Description of Substance/Chemical
- EPA Hazardous Waste Number
- EPA Hazard Code
- Anticipated Quantity to be purchased, utilized or generated
- Anticipated Hazardous Waste Transporter
- Anticipated Hazardous Waste Disposal Facility Contractor and Location (City/Municipality, State)
- Anticipated Treatment Method

4.16 HAZARDOUS WASTE REPORT (MAY 1999)

The Recipient shall submit a Hazardous Waste Report at the completion of award performance. The Report shall specifically identify each Hazardous Waste (as defined under 40 CFR 261, Subpart D, entitled Lists of Hazardous Wastes) actually utilized, or generated in the performance of this award. For each such Hazardous Waste identified, the Report shall specifically provide the following information:

- Description of Substance/Chemical
- EPA Hazardous Waste Number
- EPA Hazard Code
- Actual Quantity Disposed
- Actual Hazardous Waste Transporter
- Actual Hazardous Waste Disposal Facility Contractor and Location (City/Municipality, State)
- Actual Disposal Date
- Actual Treatment Method

The Hazardous Waste Report is intended as a final reconciliation of anticipated versus actual Hazardous Substances purchased, utilized, or generated in the performance of this award.

4.17 PROPERTY REPORTS (DEC 1999)

The NETL Property Handbook entitled "Management of Government Property in the Possession of Contractors," contains forms, instructions, and suggested formats for submission of property reports. This handbook can be found at <http://www.netl.doe.gov/business/index.html>.

4.18 ANNUAL REPORT OF PROPERTY IN THE CUSTODY OF CONTRACTORS (NETL F 580.1-8) (DEC 1999)

This report includes **ALL** Government-owned and Government-furnished property and materials for which the Recipient is accountable to the Government. This report shall also include Government Property at subcontractor's plants and alternate locations. This report is submitted on NETL F 580.1-8 for the period ending September 30 and is due by October 15.

4.19 REPORT OF TERMINATION OR COMPLETION INVENTORY (SF-1428 AND SF-120) (MAY 1999)

This report submitted on the SF-1428 and SF-120 is due immediately upon completion or termination of the award. The Recipient is required to perform and cause each subcontractor to perform a physical inventory, adequate for disposal purposes, of all Government property applicable to the award.

4.20 HOT LINE REPORT (DEC 1999)

The "Hot Line Report" may be used to report a major breakthrough in research, development, or design; an event causing a significant schedule slippage or cost growth; an environmental, safety and health violation; achievement of or failure to achieve an important technical objective; or any requirement for quickly documented direction or redirection. The report shall be submitted by the most rapid means available, usually electronic, and should confirm telephone conversations with DOE representatives. Identification as a "Hot Line Report" serves notice at each link in the delivery chain that expedition in handling is required. Unless otherwise agreed by the parties involved, DOE is expected to take action and respond in a similarly timely manner. The report should include:

1. Recipient's name and address;
2. Award title and number;
3. Date;
4. Brief statement of problem or event;
5. Anticipated impacts; and
6. Corrective action taken or recommended.

Hot line reports shall document the incidents listed below:

1. Any single fatality or injuries requiring hospitalization of five or more individuals is to be immediately reported.
2. Any significant environmental permit violation is to be reported as soon as possible, but within 24 hours of the discovery of the incident.
3. Other incidents that have the potential for high visibility in the media are to be reported as quickly as possible, but within 24 hours following discovery.
4. Any failure resulting in damage to Government-owned equipment in excess of \$50,000 is to be reported as quickly as possible, but within 24 hours of the discovery of the failure.
5. Any unplanned event which is anticipated to cause a schedule slippage or cost increase significant to the project is to be reported within 24 hours.
6. Any verbal or written Notice of Violation of any Environmental, Safety, and Health statutes arising from the performance of this award is to be immediately reported.
7. Any accidental spill or release which is in violation of any Environmental, Safety, and Health statutes arising from the performance of this award is to be immediately reported, but within 24 hours of the discovery of the accident.
8. Any incident which causes a significant process or hazard control system failure, or is indicative of one which may lead to any of the above defined incidents, is to be reported as soon as possible, but within 5 days of discovery.

The requirement to submit Hot Line Reports for the incidents identified in 1, 2, 3, 6, or 7 is for the sole purpose of enabling DOE officials to respond to questions relating to such events from the media and other public.

When an incident is reported in accordance with 4, 5, 6, 7, or 8, the Recipient shall conduct an investigation of its cause and make an assessment of the adequacy of resultant action. A written report is required no later than ten (10) calendar days following the incident and shall include an analysis of the pertinent facts regarding the cause, and a schedule of the remedial events and time periods necessary to correct the action.

When an event results in the need to issue a written or verbal statement to the local media, the statement is to be cleared first; if possible, and coordinated with NETL Management and Communications Division, the Contracting Officer Representative (COR) and the Contracting Officer.

4.21 JOURNAL ARTICLES, CONFERENCE PAPERS AND PROCEEDINGS GENERATED BY LARGE BUSINESSES FOR DOE REVIEW (DEC 1999)

The Recipient shall submit to DOE for review and approval all documents generated by the Recipient, or any subcontractor, which communicate the results of scientific or technical work supported by DOE under this award, whether or not specifically identified in the award, prior to submission for publication, announcement, or presentation. Such documents include journal articles, conference papers and proceedings, etc. Each such document shall be accompanied by a properly completed NETL Form 2050.4, "Request for Patent Clearance for Release of Contracted Research Documents."

The Recipient shall simultaneously submit a draft version of the document to the DOE COR and the DOE Patent Counsel Office prior to the publication, presentation, or announcement. The document submitted to the DOE Patent Counsel shall be accompanied by a completed NETL Form 2050.4. The DOE COR and DOE Patent Counsel shall review the draft version of the document and notify the Recipient of approval or recommended changes. The approved final version shall be submitted to the NETL AAD Document Control Coordinator.

The following information shall be provided for conference papers and proceedings, etc.

- Name of conference
- Location of conference (city, state, and country)
- Date of conference (month/day/year)
- Conference sponsor

4.22 JOURNAL ARTICLES, CONFERENCE PAPERS AND PROCEEDINGS GENERATED BY A SMALL BUSINESS OR NONPROFIT ORGANIZATION FOR DOE REVIEW (DEC 1999)

The Recipient shall submit to DOE for review and approval all documents generated by the Recipient, or any subcontractor, which communicate the results of scientific or technical work supported by DOE under this award, whether or not specifically identified in the award, prior to submission for publication, announcement, or presentation. Such documents include journal articles, conference papers and proceedings, etc. Each such document shall be accompanied by a properly completed NETL Form 2050.4, "Request for Patent Clearance for Release of Contracted Research Documents."

The Recipient shall submit a draft version of the document to the COR prior to the publication, presentation, or announcement. The COR shall review the draft version of the document and notify the Recipient of approval or recommended changes. The final version, along with a completed NETL Form 2050.4, shall be submitted to the NETL AAD Document Control Coordinator.

The following information shall be provided for conference papers and proceedings, etc.

- Name of conference
- Location of conference (city, state, and country)
- Date of conference (month/day/year)
- Conference sponsor

4.23 JOURNAL ARTICLES, CONFERENCE PAPERS AND PROCEEDINGS GENERATED BY A UNIVERSITY FOR DOE REVIEW (DEC 1999)

The Recipient shall submit to DOE for review and comment all documents generated by the Recipient, or any subcontractor, which communicate the results of scientific or technical work supported by DOE under this award, whether or not specifically identified in the award, prior to submission for publication, announcement, or presentation. Such documents include journal articles, conference papers and proceedings, etc. Each such document shall be accompanied by a properly completed NETL Form 2050.4, "Request for Patent Clearance for Release of Contracted Research Documents."

The Recipient shall submit a draft version of the document to the COR prior to the publication, presentation, or announcement. The COR shall review the draft version of the document and notify the Recipient of recommended changes. The final version, along with a completed NETL Form 2050.4, shall be submitted to the NETL AAD Document Control Coordinator.

The following information shall be provided for conference papers and proceedings, etc.

- Name of conference
- Location of conference (city, state, and country)
- Date of conference (month/day/year)
- Conference sponsor

4.24 ATTACHMENT C -- BUDGET PAGES (DEC 1999)

The budget documents (DOE Form 4620.1, ER F4620.1A, SF424a or the DOE 4600.4) will be inserted on this page upon award.

The Applicant must prepare the budget documents and include them in Volume I - Business and Financial Application. These documents and instructions for completion of the documents can be found on the NETL Homepage at: <http://www.netl.doe.gov/business/forms/forms.html>.

4.25 ATTACHMENT D -- RECIPIENT ACQUIRED PROPERTY (AUG 1999)

Recipient acquired property will be listed on this page upon award.

SECTION V -- CONDITIONS AND NOTICES

5.1 NUMBER AND TYPE OF AWARDS (JAN 2000)

It is anticipated that there will be between two and four cooperative agreement awards resulting from this solicitation. However, the Government reserves the right to fund, in whole or in part, any, all, or none of the applications submitted in response to this solicitation and will award that number of financial assistance instruments which serves the public purpose and is in the best interest of the Government.

5.2 COST SHARING REQUIREMENTS (DEC 1999)

The DOE has determined that this particular program is covered by Sections 3001 and 3002 of the Energy Policy Act (EPAAct), and therefore, cost sharing is mandatory in accordance with 10 CFR 600.30 and 42 U.S.C. 13542 for financial assistance awards. EPAAct 3002 requires a cost share commitment of at least 20 percent of the total estimated project cost from non-Federal sources for research and development projects and at least 50 percent of the total estimated project cost from non-Federal sources for demonstration and commercial projects. The Government has established a mandatory cost share of 20 percent for Phase I, 35 percent for Phase II, and 50 percent for Phase III. If during the preliminary application review it is found that the Applicant does not satisfy the cost share requirement as set forth in the solicitation, the application will not be comprehensively reviewed and thus shall not be considered for an award.

The proposed cost sharing must meet the requirements of 10 CFR 600.123 and 10 CFR 600.224. Allowable costs for cost sharing shall be in accordance with 10 CFR 600.127 and 10 CFR 600.222.

5.3 CONTENT OF RESULTING AWARD (JULY 1999)

Any agreement awarded as a result of this solicitation will contain Sections I-IV of this solicitation and shall be subject to the terms and conditions addressed therein, as applicable.

Blank areas appearing in this solicitation, indicated by "[To Be Determined]" or "[TBD]" will be completed after negotiations.

5.4 APPLICATION PREPARATION COSTS (DEC 1999)

This solicitation does not obligate the Government to pay any costs incurred in the preparation and submission of applications, or in making necessary studies or designs for the preparation thereof or to acquire, or contract for any services.

5.5 COMMITMENT OF PUBLIC FUNDS (AUG 1999)

The Contracting Officer is the only individual who can legally commit the Government to the expenditure of public funds in connection with the proposed award. Any other commitment, either explicit or implied, is invalid.

5.6 AVAILABILITY OF FUNDS (AUG 1999)

Funds are not presently available for this program solicitation, however, it is anticipated that between two and four cooperative agreement awards will be made during the first quarter of Fiscal Year 2001, with a total estimated cost from \$5 million to \$15 million per award.

5.7 PRE-APPLICATION CONFERENCE IS NOT PLANNED (JULY 1999)

A pre-application conference is not contemplated.

5.8 FALSE STATEMENTS (AUG 1999)

Applications must set forth full, accurate, and complete information as required by this solicitation. The penalty for making false statements in applications is prescribed in 18 U.S.C. 1001.

5.9 AMENDMENTS TO SOLICITATION (DEC 1999)

The only method by which any term of this solicitation may be amended is by an express, formal amendment generated by the issuing office. No other communication, whether written or oral will amend or supersede the terms of this solicitation.

Amendments to the solicitation will be posted on NETL's website at <http://www.netl.doe.gov/business/solicit/>.

5.10 CATALOG OF FEDERAL DOMESTIC ASSISTANCE NUMBER (CFDA) (AUG 1999)

The Catalog of Federal Domestic Assistance number assigned to the program supporting the award(s) is 81.089, "Fossil Energy Research and Development."

5.12 PARTICIPATION BY FEDERALLY FUNDED RESEARCH AND DEVELOPMENT CENTERS (FFRDC) AND DEPARTMENT OF ENERGY (DOE) MANAGEMENT AND OPERATIONS (M&O) CONTRACTORS (MAR 2000)

Applications submitted by, or substantially relying upon the technical expertise of, FFRDCs and DOE M&O contractors are not desired, will not be evaluated, and will not be eligible for an award under this solicitation. Applicants are encouraged to maximize the use of private sector organizations in the performance of the proposed effort. However, an application that includes performance by an FFRDC or DOE M&O contractor(s) as a subcontractor will be evaluated and may be considered for award, provided that: (1) the proposed use of any such entities is specifically authorized by the cognizant agency for the FFRDC or DOE for DOE M&O contractors, in accordance with the procedures established for the FFRDC or the M&O contractor; (2) the work is not otherwise available from the private sector; and (3) the aggregate M&O and/or National Laboratory involvement does not exceed 20 percent of the applicant's total estimated project cost. DOE reserves the right to fund the work through a DOE field work proposal or a subcontract under the Recipient's prime award. See the application preparation instructions in Section VI.

5.13 TIME, DATE AND PLACE APPLICATIONS ARE DUE (DEC 1999)

Applications shall be submitted in paper media in sealed envelopes or packages addressed to the office and point of contact specified below:

APPLICATIONS MUST BE RECEIVED AT THE FOLLOWING MAILING ADDRESS NO LATER THAN 3:00 P.M. local prevailing time on June 27, 2000.

U.S. Department of Energy
National Energy Technology Laboratory
P.O. Box 880
3610 Collins Ferry Road
Morgantown, WV 26507-0880

Point of Contact: Kelly McDonald
Telephone Number: 304/285-4113
Fax Number: 304/285-4683
E-MAIL Address: kelly.mcdonald@netl.doe.gov
Contracting Officer: Raymond R. Jarr

External Marking of Applications

Applications shall be marked with the following information:

- (1) Address of Proposer
- (2) Solicitation Number
- (3) Due Time and Date of Applications
- (4) Point of Contact at Issuing Office

5.14 FEE AND PROFIT (JULY 1999)

Fee or profit will not be paid to the Recipients of financial assistance awards resulting from this solicitation.

5.15 DETERMINATION OF RESPONSIBILITY (AUG 1999)

DOE will evaluate the potential Recipient's responsibility before award. Responsibility determinations are focused on the Recipient's capability to manage and account for the funds, property and other assets provided to perform satisfactorily under the terms of the award. If a potential Recipient is determined to not be in compliance or cannot or will not comply with generally applicable requirements (see 10 CFR Part 600, Appendix A), the Contracting Officer will find the Recipient not responsible and may either disapprove the application or use special restrictive conditions as a term of award.

5.16 TREATMENT OF PROPRIETARY INFORMATION (AUG 1999)

An application may include technical data and other data, including trade secrets and/or privileged or confidential commercial or financial information, which the applicant does not want disclosed to the public or used by the Government for any purpose other than application evaluation. To protect such data, the applicant should specifically identify each page including each line or paragraph thereof containing the data to be protected and mark the cover sheet of the application with the following Notice as well as referring to the Notice on each page to which the Notice applies:

NOTICE OF RESTRICTION ON DISCLOSURE AND USE OF DATA

The data contained in pages [] of this application have been submitted in confidence and contain trade secrets or proprietary information, and such data shall be used or disclosed only for evaluation purposes, provided that if this applicant receives an award as a result of or in connection with the submission of this application, DOE shall have the right to use or disclose the data therein to the extent provided in the award. This restriction does not limit the Government's right to use or disclose data obtained without restriction from any source, including the applicant.

DOE shall not refuse to consider an application solely on the basis that the application is restrictively marked.

5.17 TELEGRAPHIC AND E-MAIL APPLICATIONS (AUG 1999)

Telegraphic applications will **NOT** be considered although applications may be amended by telegraphic notice provided such notice is received prior to the date and time specified for receipt. The term "Telegraphic" includes both mailgrams and facsimile submissions. Applications submitted by E-mail or other electronic means will **NOT** be considered.

5.18 LATE APPLICATIONS, AMENDMENTS AND WITHDRAWALS OF APPLICATIONS (JAN 2000)

An application or amendment of an application shall be timely if it is received at the location on or before any of the deadline dates and times specified in this section.

Applications or amendments of applications may be withdrawn by written notice at any time before award. Written notice includes E-mails and facsimiles. An authorized representative may withdraw applications in person, if the representative's identity is made known and the representative signs a receipt for the application before award.

5.19 APPLICATION CLARIFICATION (JULY 1999)

DOE reserves the right to require applications to be clarified or supplemented to the extent considered necessary either through additional written submissions or oral presentations.

5.20 AWARD WITHOUT DISCUSSIONS (AUG 1999)

Notice is given that award may be made after few or no exchanges, discussions or negotiations. Therefore, all applicants are advised to submit their most favorable application to the Government.

5.21 GOVERNMENT RIGHT TO REJECT OR NEGOTIATE (JULY 1999)

The Government reserves the right, without qualification, to reject any or all applications received in response to this solicitation and to select any application, in whole or in part, as a basis for negotiation and or award.

5.22 ANTICIPATED SELECTION AND AWARD DATES (AUG 1999)

It is anticipated that selections for negotiations leading to award will be made in October 2000. Awards are expected to be made during the last quarter of Calendar Year 2000.

5.23 NOTIFICATION TO UNSUCCESSFUL APPLICANTS (AUG 1999)

Written notice will be provided to unsuccessful applicants after selection in accordance with 10 CFR 600.19. Information about selected projects will be made publicly available.

5.24 APPLICATION ACCEPTANCE PERIOD (AUG 1999)

The minimum application acceptance period shall be 180 calendar days after the deadline(s) for receipt of applications.

5.25 DISPOSITION OF APPLICATIONS (AUG 1999)

Applications will not be returned unless they are timely withdrawn.

5.26 PRE-SUBMISSION REVIEW AND CLEARANCES (AUG 1999)

Pre-submission review under Executive Order 12372, "Intergovernmental Review of Federal Programs" is not required.

5.27 PROJECT PERIOD (AUG 1999)

The Government anticipates the project period for the subject award(s) not to exceed five years. Awards will have project and budget periods that are specific to the project and funding. Awards longer than one year will include continuation periods which will be subject to the availability of funds.

5.28 SIMPSON-CRAIG AMENDMENT (AUG 1999)

Organizations which are described in section 501(c)(4) of the Internal Revenue Code of 1986 and engage in lobbying activities after December 31, 1995, shall not be eligible for the receipt of Federal funds constituting an award, grant, or loan. Section 501(c)(4) of the Internal Revenue Code of 1986 covers:

“Civic leagues or organizations not organized for profit but operated exclusively for the promotion of social welfare, or local associations of employees, the membership of which is limited to the employees of a designated person or persons in a particular municipality, and the net earnings of which are devoted exclusively to charitable, educational or recreational purposes.”

Lobbying activities are defined broadly to include, among other things, contacts on behalf of an organization with specified employees of the Executive Branch and Congress with regard to Federal legislative, regulatory and program administrative matters.

5.29 LOANS NOT AVAILABLE (JULY 1999)

Loans are not available under the DOE Minority Economic Impact (MEI) loan program, 10 CFR Part 800, to finance the cost of preparing a financial assistance application.

5.30 DEBRIEFINGS (AUG 1999)

Each unsuccessful applicant will be offered the opportunity for an explanation or debriefing as to why the application was not selected. Debriefings will be conducted at the earliest feasible time.

5.31 ADDITIONAL ELIGIBILITY REQUIREMENTS OF THE ENERGY POLICY ACT OF 1992 (JULY 1999)

Awards under this solicitation also are subject to the eligibility requirements stated in Section 2306 of the Energy Policy Act of 1992 (EPAAct). An applicant private sector firm shall be eligible to receive financial assistance under this section only if it is a United States-owned company, or the firm is incorporated in the United States and has a parent company which is incorporated in a country which affords to United States-owned companies: (1) opportunities comparable to those afforded to any other company to participate in any joint venture similar to the one described in this solicitation; and (2) adequate and effective protection for United States companies' intellectual property rights.

In addition, the applicant must show that the project, as a whole, is in the economic interest of the United States. To fulfill this requirement, the applicant must consider the contributions of all participants in the project, including any contractors or suppliers that the applicant has named and relied upon in its application. This can be evidenced by: (1) investment in the United States in research, development, and manufacturing, such as the manufacture of major components or subassemblies in the United States; (2) significant contributions to employment in the United States; (3) agreement with respect to any technology arising from assistance provided under this solicitation to promote the manufacture within the United States of products resulting from that technology, taking into account the goals of promoting the competitiveness of United States industry, and to procure parts and materials from competitive suppliers.

All applicants shall complete documentation providing a certification of eligibility under Section 2306 of the EPAAct. Based on the information received, a determination by DOE that the EPAAct eligibility requirements are met should be made prior to award of an agreement.

5.32 NATIONAL ENVIRONMENTAL POLICY ACT STRATEGY (DEC 1999)

The National Environmental Policy Act of 1969 (NEPA) establishes a national policy to ensure that consideration is given to environmental values and factors in Federal planning and decision making. The Department of Energy's policy is to comply fully with the letter and spirit of NEPA. To ensure that environmental factors are considered in the decision making process and to promote environmentally responsible decisions, DOE incorporates NEPA requirements early in the planning process for proposed actions. Consistent with Council on Environmental Quality (CEQ) NEPA regulations (40 CFR Parts 1500-1508) and DOE NEPA regulations (10 CFR Part 1021), an overall strategy for compliance with NEPA has been developed. This includes performing project-specific environmental reviews under 10 CFR 1021.216 of environmental issues pertinent to each proposed project before projects are selected, followed by site-specific environmental reviews under NEPA of each project after DOE selection. It is probable that most, if not all, of the projects proposed under this solicitation will not have a significant effect on the environment, and as such, in accordance with DOE NEPA regulations, will be candidates for "categorical exclusions" (CX) and thus will not require the preparation of an environmental assessment or environmental impact statement. A CX is prepared for actions that obviously do not have a significant environmental impact. To qualify for a CX, a project must be an excluded action and meet certain site-specific criteria. These criteria concern adverse effects on flood plains, wetlands, archeological sites, Indian lands, etc. For further information on categorical exclusions, see 10 CFR Part 1021.410.

No action taken by DOE with regard to any application prior to the completion of the site-specific analysis, including project selection or award, shall be a final decision for purposes of compliance with NEPA.

5.33 PRE-SELECTION PROJECT-SPECIFIC ENVIRONMENTAL QUESTIONNAIRE (DEC 1999)

For Applications that undergo comprehensive evaluation, DOE will review under 10 CFR 1021.216, project-specific environmental information supplied by the applicant on the Environmental Questionnaire which is submitted as part of Volume I, Business and Financial application. The environmental information provided by the applicant is independently evaluated by DOE and documented in the form of an environmental critique, which may also include supplemental information developed by DOE. Subsequently, DOE prepares a publicly available environmental synopsis to document the consideration given to environmental factors and to record that the relevant environmental consequences of reasonable alternatives have been evaluated in the selection process.

5.34 POST-SELECTION ENVIRONMENTAL REVIEW (DEC 1999)

Soon after selection, which shall be contingent as specified in 10 CFR 1021.216(i), depending on the information necessary to satisfy NEPA, applicants may be requested to provide additional environmental information which is more detailed than that provided on the Environmental Questionnaire of this solicitation. This detailed site-and project-specific information may be used as the basis for site-specific NEPA documents prepared by DOE for each selected project. Such NEPA documents shall be prepared, considered, and published by DOE in full conformance with the requirements of the CEQ regulation and DOE NEPA regulations. DOE must complete its appropriate NEPA process before a go/no go decision and before a Recipient may proceed with detailed design under the award.

5.35 POST-AWARD ENVIRONMENTAL MONITORING (DEC 1999)

Each resulting award will specify the monitoring and reporting requirements necessary to ensure compliance with applicable environmental regulations, and permits obtained from Federal, state and local government agencies and DOE NEPA regulations.

5.36 52.227-6 ROYALTY INFORMATION. (APR 1984)

(a) Cost or charges for royalties. When the response to this solicitation contains costs or charges for royalties totaling more than \$250, the following information shall be included in the response relating to each separate item of royalty or license fee:

(1) Name and address of licensor.

(2) Date of license agreement.

(3) Patent numbers, patent application serial numbers, or other basis on which the royalty is payable.

(4) Brief description, including any part or model numbers of each contract item or component on which the royalty is payable.

(5) Percentage or dollar rate of royalty per unit.

(6) Unit price of contract item.

(7) Number of units.

(8) Total dollar amount of royalties.

(b) Copies of current licenses. In addition, if specifically requested by the Contracting Officer before execution of the contract, the offeror shall furnish a copy of the current license agreement and an identification of applicable claims of specific patents.

5.37 952.227-84 NOTICE OF RIGHT TO REQUEST PATENT WAIVER. (FEB 1998)

Offerors have the right to request a waiver of all or any part of the rights of the United States in inventions conceived or first actually reduced to practice in performance of the contract that may be awarded as a result of this solicitation, in advance of or within 30 days after the effective date of contracting. Even where such advance waiver is not requested or the request is denied, the contractor will have a continuing right under the contract to request a waiver of the rights of the United States in identified inventions, i.e., individual inventions conceived or first actually reduced to practice in performance of the contract. Domestic small businesses and domestic nonprofit organizations normally will receive the patent rights clause at DEAR 952.227-11 which permits the contractor to retain title to such inventions, except under contracts for management or operation of a Government-owned research and development facility or under contracts involving exceptional circumstances or intelligence activities. Therefore, small businesses and nonprofit organizations normally need not request a waiver. See the patent rights clause in the draft contract in this solicitation. See DOE's patent waiver regulations at 10 CFR Part 784.

5.38 NOTICE REGARDING ELIGIBLE/INELIGIBLE ACTIVITIES (AUG 1999)

Eligible activities under this program include those which describe and promote the understanding of scientific and technical aspects of specific energy technologies, but not those which encourage or support political activities such as the collection and dissemination of information related to potential, planned or pending legislation.

5.39 UNNECESSARILY ELABORATE APPLICATIONS (JULY 1999)

Unnecessarily elaborate brochures or other presentations beyond those sufficient to present a complete and effective response to this solicitation are not desired and may be construed as an indication of the applicant's lack of cost consciousness. Elaborate art work, expensive paper and bindings, and expensive visual and other presentation aids are neither necessary nor wanted.

SECTION VI -- APPLICATION PREPARATION INSTRUCTIONS

6.1 APPLICATION PREPARATION INSTRUCTIONS -- GENERAL (JULY 1999)

The application shall be prepared as set forth herein to provide a standard basis for evaluation and to insure that each application will be uniform as to format and sequence. These instructions are not to be included in your application.

Applications shall be prepared in accordance with this section. To aid in evaluation, applications shall be clearly and concisely written as well as being neat, indexed (cross-indexed as appropriate) and logically assembled. All pages of each part shall be appropriately numbered and identified with the name of the applicant, the date and the solicitation number to the extent practicable. Each volume is a stand alone document, therefore, some information provided may need to be included in both volumes.

Each application should clearly demonstrate the applicant's capability, knowledge, and experience in regard to the requirements described herein. Failure to respond or follow the instructions regarding the organization and content of the application may result in the application being deemed unacceptable.

DOE may return an application that does not include all information and documentation required by statute, 10 CFR Part 600, or the solicitation when the nature of the omission precludes review of the application. During the review of a complete application, DOE may request the submission of additional information if the information is essential to evaluate the application.

6.2 OVERALL ARRANGEMENT OF APPLICATION (AUG 1999)

The overall application shall consist of two (2) physically separated volumes, individually entitled as stated below. Submit the required number of each application volume shown in the matrix below.

Volume	Original	Number of Copies	Electronic Version*
Volume I -- Business and Financial Application	1	3	--
Volume II -- Technical Application	1	6	1

* Electronic version of the technical application shall be submitted via diskette or CD-ROM in Adobe Acrobat Portable Document Format, WordPerfect, or Word.

6.3 VOLUME I -- BUSINESS AND FINANCIAL APPLICATION PREPARATION INSTRUCTIONS (DEC 1999)

Volume I consists of an application coversheet, application forms, assurances, budget pages, supporting cost data requirements, environmental questionnaire, exceptions and deviations to the model award, and any other business and financial information.

The application identified as the original shall contain all original signatures of all documents requiring signatures by the offeror. Use of reproductions of signed originals is authorized in all other copies of the application.

The applicant shall not provide application information in three-ring binders.

The Applicant shall satisfy the cost share requirements set forth elsewhere in the solicitation. The amount of cost share shall be based on the total estimated project cost, including cost from non-Federal sources.

Format and Content.

ALL FORMS NEEDED FOR PREPARATION OF VOLUME I ARE FOUND ON THE NETL HOMEPAGE AT: <http://www.netl.doe.gov/business/forms/forms.html>. PLEASE NOTE THAT ALL FORMS WERE DEVELOPED USING WORDPERFECT 6.1 AND FORMATTED FOR PRINTING USING A HP LASERJET IIIsi PRINTER. INSTRUCTIONS FOR COMPLETION OF THE FORMS ARE CONTAINED ON THE BACK OF EACH FORM. QUESTIONS ON COMPLETION OF THE FORMS SHOULD BE ADDRESSED TO THE CONTRACT SPECIALIST.

Volume I shall include the following documents (in the order listed):

1. VOLUME I BUSINESS AND FINANCIAL APPLICATION COVERSHEET

The Application Coversheet for Volume I shall be provided with each copy of Volume 1 and is located at the end of Section 6.3.

2. APPLICATION FOR FEDERAL ASSISTANCE Standard Form 424# -- **Form #: SF424**

3. FINANCIAL ASSISTANCE ASSURANCE PACKAGE -- **Form #: assure.fa**

4. BUDGET PAGE(S)

The applicant must provide a detailed budget information on one or more of the following budget forms. Non-Universities can use the 4600.4 or the 424.A. Universities should submit both the D4620.1 and the ERF4620. Supporting cost data for Universities shall be submitted as indicated by the instructions on the forms. For applicants other than Universities see the instructions below under Paragraph No. 5.

Applicants shall provide budget period costs and supporting cost detail by budget period and shall provide the total project costs for all budget periods. The budget period costs shall correspond to the Tasks to be Performed in the Statement of Project Objectives with a budget period ending at the DOE decision point and the next budget period beginning with month 13 or the next technology phase.

Failure to provide the detailed cost information as described in the instructions will result in an incomplete package. In addition, the applicant shall stipulate in the application the source and amount of cost sharing and the value of third party in-kind contributions proposed to meet the requirement.

a. Federal Assistance Budget Information (for other than University Applicants) -- DOE F 4600.4 -- **Form # D4600.4**

b. Budget Page DOE F 4620.1 (for University Applicants) -- **Form # D4620.1**

c. Grant Application Project Period Summary ER F 4620.1A (for University Applicants) -- **Form # ERF4620**

d. Budget Information -Non-Construction Programs (for other than University Applicants) -- SF424a -- **Form #SF424a**

5. SUPPORTING COST DATA REQUIREMENTS FOR APPLICANTS OTHER THAN UNIVERSITIES

- a.) Personnel: The offeror's SOPO is intended for defining the work scope. Personnel costs shall be supported by a matrix identifying labor categories, hours proposed, hourly rate and cost on a per task and total budget period basis.
- b.) Fringe Benefits and Indirect Charges: Include the major base and pool expense groupings (for indirects such as fringe, overhead, and G&A) by line item and dollar amount. This shall be prepared from the offeror's most recently completed Fiscal Year, the current Fiscal Year, and the estimate for the next Fiscal Year. The offeror shall state at the bottom of the exhibit the inclusive dates of their Fiscal Year. The applicant may substitute a Government approved written indirect rate agreement if such agreement contains rates that cover the period of performance.
- c.) Travel: Travel shall be supported by a matrix identifying number of trips, locations to be visited, number of persons traveling, transportation cost, per diem cost, and total cost.
- d.) Equipment: List each item, its cost, and reason it is needed for the project.
- e.) Supplies: Indicate types required and estimated costs and reason it is needed for the project.
- f.) Contractual: Detail all subcontract and consultant costs. Subcontracts/Consultants must be supported in the same level of detail as the applicant's costs, on a per task and total budget period basis.

Consultants: If the offeror proposes the use of named consultants, provide the following:

- (1) Resume.
- (2) Details regarding the proposed rate and its reasonableness, and justification for selecting the consultant.

The applicant shall identify the basis of each of the costs (i.e., quotes, catalog prices, prior purchase orders, etc).

- g.) Other: Itemize and justify. Other Direct Costs such as printing/ reproduction/freight/postage cost may be identified as a flat amount on a per-task basis.

6. ENVIRONMENTAL QUESTIONNAIRE -- **Form # nepasol**

7. ACKNOWLEDGMENT OF AMENDMENTS

The applicant shall specifically indicate their acknowledgment and receipt of the amendment(s) posted on the NETL Website at <http://www.netl.doe.gov/business/solicit/> by signing the amendment and including it in Volume I or stating the receipt of the amendment in the text of Volume I.

8. ADDITIONAL APPLICATION SUBMISSION REQUIREMENTS FOR FFRDC'S, DOE M&O CONTRACTORS OR LABORATORY ENTITIES

In addition to the application information to be provided by the applicant as set forth in other parts of this Section, the following additional requirements apply for Federally Funded Research and Development Centers (FFRDC's), DOE M&O Contractors, and/or laboratory entities:

1. Justification.

The offeror shall submit a letter with its application (Volume I) which states that to the best of its knowledge, the work requested will not place the FFRDC or the DOE M&O contractor in direct competition with the domestic private sector, and that the proposed scope of work cannot be performed by any private entity.

2. Work Scope.

The offeror shall submit a detailed scope of work which clearly identifies that portion of the proposed effort for which the expertise and ability to perform lie solely with the DOE M&O contractor, FFRDC's or laboratory. This detailed scope of work shall be provided as an appendix to the Volume II, Technical Application.

3. Cost Information.

The offeror shall provide cost information for that portion of the proposed work scope (see 2, above) to be performed by the DOE M&O contractor. The cost information shall be furnished in the same format and level of detail as prescribed for subcontractors. The estimated cost of the effort shall be clearly identified in the Volume I, Business and Financial Application.

4. Authorization from the DOE Contracting Officer.

The applicant must submit a document from the DOE Contracting Officer or authorized designee stating that the M&O contractor is authorized to participate in the proposed effort.

9. EXCEPTIONS AND DEVIATIONS

The offeror shall identify and explain any exceptions or deviations taken or conditional assumptions made with respect to the model cooperative agreement, the requirements of this Section, and any other matters associated with this solicitation.

Any exceptions taken must contain sufficient amplification and justification to permit evaluation. The benefit to the Government shall be explained for each exception taken. Such exceptions will not, of themselves, automatically cause an application to be termed unacceptable. A large number of exceptions, or one or more significant exceptions not providing benefit to the Government, however, may result in rejection of your application(s) as unacceptable.

10. SUMMARY OF EXCEPTIONS AND DEVIATIONS TAKEN IN OTHER VOLUMES

The offeror shall summarize each technical, cost, business, or other exceptions taken elsewhere, and provide specific cross references to its full discussion.

11. PROPOSAL SUPPLEMENTAL FORM

All applications are to include a completed "Proposal Supplemental Form" located at the end of Section 6.3.

This is the Proposal Coversheet for Volume I and shall be provided with the original and each copy of Volume I.

**VOLUME I
BUSINESS AND FINANCIAL APPLICATION COVERSHEET
DE-PS26-00NT40779**

Application No. _____
(For official use only)

Application Date: _____

Acceptance Days: _____

Application Title: _____

Company Name: _____

Address: _____

Point of Contact: _____

Telephone/FAX Number: _____

PROPRIETARY INFORMATION: Does this submittal contain Trade Secrets or Proprietary Information?

_____ NO _____ YES (if yes, complete box below)

NOTICE OF RESTRICTIONS ON DISCLOSURE AND USE OF DATA

The data contained on pages _____ of this application have been submitted in confidence and contain trade secrets or proprietary information, and such data shall be used or disclosed only for evaluation purposes, provided that if this applicant receives an award as a result of or in connection with the submission of this application, DOE shall have the right to use or disclose the data herein to the extent provided in the award. This restriction does not limit the Government's right to use or disclose data obtained without restriction from any source, including the applicant.

PROPOSAL SUPPLEMENTAL FORM

Project Title: _____

Prime Contractor Name and (Fed Ex) Address: _____

Congressional District: _____

Prime Contractor Business Type (check one):

☐ Small Business

☐ Large Business

☐ Educational Institution

☐ State/Local Government

☐ Non-Profit Organization

☐ Other _____

Technical Point of Contact:

Business Point of Contact:

Name: _____

Name: _____

Address: _____

Address: _____

E-mail: _____

E-mail: _____

Phone: (Voice) _____
(Fax) _____

Phone: (Voice) _____
(Fax) _____

Subcontractors/FFRDC's/M&O Contractors/National Laboratories (if applicable):

NAME	AMOUNT

Government Share of Total Proposed Project: \$ _____

Recipient Share of Total Proposed Project: \$ _____

Total Estimated Project Value: \$ _____

Total Project Duration (Months): _____

This is the Proposal Coversheet for Volume II and shall be provided with the original and each copy of Volume II.

VOLUME II -- TECHNICAL APPLICATION COVERSHEET
Energy Efficient Building Equipment and Envelope Technologies
DE-PS26-00NT40779

Proposal No. _____
(For official use only)

Proposal Date: _____

Acceptance Days: _____

Need Area: _____

Proposed Title: _____

Company Name: _____

Address: _____

Point of Contact: _____

Telephone/FAX Number: _____

Principal Investigator: _____

Telephone Number: _____

PROPRIETARY INFORMATION: Does this submittal contain Trade Secrets or Proprietary Information?

_____ NO _____ YES (if yes, complete box below)

NOTICE OF RESTRICTIONS ON DISCLOSURE AND USE OF DATA

The data contained on pages _____ of this application have been submitted in confidence and contain trade secrets or proprietary information, and such data shall be used or disclosed only for evaluation purposes, provided that if this applicant receives an award as a result of or in connection with the submission of this application, DOE shall have the right to use or disclose the data herein to the extent provided in the award. This restriction does not limit the Government's right to use or disclose data obtained without restriction from any source, including the applicant.

6.4 VOLUME II -- TECHNICAL APPLICATION PREPARATION INSTRUCTIONS (AUG 1999)

The proposer shall include a technical discussion in the format specified below. This format relates to the technical evaluation criteria found in Section VII. Alternate heading names and additional headings may be included as desired.

In order to produce a comprehensive application for this solicitation, the applicant should address, at a minimum, the areas listed below. To help facilitate the review process and to insure addressing all the review criteria, the applicant shall use the following Table of Contents when preparing the technical application.

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GENERAL TECHNICAL INFORMATION

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- B. RESUMES
- C. ADDITIONAL PERTINENT PUBLICATIONS (if any)
- D. TECHNICAL EXCEPTIONS AND DEVIATIONS

6.5 TECHNICAL SUMMARY (JAN 2000)

The Department of Energy (DOE), National Energy Technology Laboratory (NETL) is seeking applications to aid in the development of systems that will produce affordable, safe, environmentally-friendly electrical power with a goal of eventually being 75 percent efficient (lower heating value) from fossil fuels. The work will focus on proof-of-concept systems of suppliers' market entry product. Proof-of-concept system is defined as the smallest system that will adequately test all of the individual components in a fully operating system. The system shall contain any combination of existing or "near-term" power industry fuel-to-electricity conversion equipment. Near term means that the equipment will be sufficiently developed in time for proof-of-concept testing starting in the year 2003 or sooner. One of these components must be a high-temperature fuel cell.

The work to be performed under this solicitation will consist of three phases. The first phase will entail identification and resolution of barrier issues of the proposed hybrid system. This will include concept identification, system definition, economic evaluation, and experimental work to resolve any barrier issues. This information will be used by DOE for system validation. The second phase will consist of a detailed design and cost study of the proposed system. The third phase will include fabrication and long-term proof-of-concept testing of the proposed system. Proof-of-concept testing is defined as tests long enough to indicate that these systems will operate over the planned expected life. If a potential offeror believes that there are no barrier issues in their proposed system, and has all of the information that would be required in the first phase, the offeror can petition to DOE to initially start the project in Phase II.

The proposed system must contain a high-temperature fuel cell combined with other power generation modules. Acceptable power generation modules are: Another fuel cell, steam turbines, gas turbines, reciprocating engines, other heat engines, etc. This solicitation does not address photovoltaic, wind, or tidal energy systems. The system must be fueled by natural gas.

The offerer must be a commercial producer of a major component of the proposed system or must team with commercial producers of the major components (defined as power producing units such as fuel cells, turbines, etc.). While the goal of this solicitation is to produce systems with energy efficiencies greater than 70 percent, it is anticipated that the initial market entry systems, investigated under this solicitation, may have efficiencies less than this.

For additional information associated with hybrid technology, please refer to the list of references contained in Section IX of the solicitation.

6.6 TECHNICAL BACKGROUND (JAN 2000)

Power producing systems containing a combination of high-temperature fuel cell and other power producing components have the potential for very high efficiency in converting fossil fuel to AC electricity. As a result, NETL issued a Program Research & Development Announcement (PRDA) for a conceptual design and feasibility study of possible fuel cells-combined cycle system concepts. Only near term systems of less than 20 MW were considered. These systems were also to be at least 70 percent efficient (lower heating value) at converting fossil fuel to AC electricity and produce electricity at costs 10 to 20 percent below today's conventional plants. In the summer of 1998, five fuel cell/turbine contracts were awarded. The awards were for approximately \$200K and for a duration of six months.

6.7 SOLICITATION OBJECTIVES (JAN 2000)

The goal of this procurement is to aid the development of systems that will produce affordable, safe, environmentally friendly electrical power at greater than 70 percent efficiency (lower heating value) from fossil fuels. Proposed power plants shall focus on the initial market entry application which is anticipated to be distributed power. The system shall contain any combination of existing or "near term" power industry fuel to electricity conversion equipment. One of these components must be a high-temperature fuel cell.

The objective of the first phase is to identify the proposed system and resolve any barrier issues. The objective of the second phase is to conduct a detailed design and cost estimate of a proof-of-concept scale system. The objective in the third phase is to fabricate and conduct testing of the long-term proof-of-concept system designed in phase two.

6.8 PUBLIC ABSTRACT (JULY 1999)

This section shall contain a public abstract of not more than one (1) typewritten page clearly stating the objectives of research, the title of the project, methodology, and sponsoring organization (s). It is a stand-alone document. This abstract may be released to the public by DOE in whole or in part any time. It is, therefore, required that it shall not contain proprietary data or confidential business information.

6.9 GENERAL TECHNICAL INFORMATION (DEC 1999)

The technical application will consist of the applicant's outline addressing the technical and management aspects of the assistance action, the applicant's capabilities and what the applicant will do to satisfy the requirements of the Statement of Project Objectives. Since the technical information contained in this section will be evaluated to determine such matters as understanding of the work to be performed, technical approach, and potential for completing the desired work, it should be specific and complete in every detail. The application should be practical and be prepared simply and economically, providing a straightforward, concise delineation of what it is the applicant will do to satisfy the requirements of the Statement of Project Objectives.

In order that the Technical Application may be evaluated strictly on the merit of the material submitted, no cost information is to be included in the Technical Application. Where estimated

man-hours will provide clarity, they shall be quoted in man-hour figures only, with no indication as to the cost of these man-hours.

The application shall not merely offer to perform work in accordance with the Statement of Project Objectives but shall describe the actual work proposed.

The Technical Application shall not exceed 50 pages. The application shall contain only single-sided pages. The statement of project objectives, resumes, additional pertinent publications, and technical exceptions and deviations are to be attachments to the Technical Application and will not be included in the page limitation. Pages in excess of the page limitation will be removed from the application, discarded prior to evaluation, and will not be evaluated. The proposed text shall be typed using times new roman font (12 point) and printed, unreduced on size 8 1/2-inch by 11-inch paper. Illustrations shall be legible and no longer than 11-inch by 17-inch foldouts, as appropriate for the subject matter. Each 11-inch by 17-inch foldouts is considered two pages when determining the number of pages. Pages of each volume shall be sequentially numbered with the volume and page numbers on each page. Except as otherwise noted in the solicitation, the page guidelines previously set forth constitute a limitation on the total amount of material that may be submitted for evaluation. No material may be incorporated in any application by reference as a means to circumvent the page limitation.

All measurements described in the application shall be expressed in the metric (SI) system with the customary unit conversion in parentheses. Additionally, applicants are hereby notified that any instrumentation associated with tasks which will be performed will be required to be in the SI system and all technical reporting will require information in the SI system.

The applicant shall organize the technical discussion as follows:

1. Technical Approach
2. Understanding of the Technology
3. Capability/Organization
4. Business Management Plan

Items 1, 2, 3, and 4 each correspond to one of the Technical Evaluation Criteria. The applicant should provide as much detail as practical in each part while providing, as a minimum, the information requested below. The applicant's discussion of each area should clearly address the technical evaluation criteria for that area.

If a potential offeror believes that there are no barrier issues in their proposed system, and has all of the information that would be required in the first phase, the offeror can petition to DOE to initially start the project in Phase II. However, the applicant's proposal still must address all three phases of the solicitation. The Applicant's rational and supporting data, such as final reports, shall be included in Appendix C, "Additional Pertinent Publications," and will not count against the page limit.

(1) Technical Approach (Criterion 1)

- The applicant shall provide a detailed discussion on the scientific and engineering rationale for the proposed technical approach and shall discuss the overall technical feasibility of the approach and to future success in the marketplace. At a minimum, the applicant shall provide preliminary flow sheets, process conditions, and mass/energy balances. The process flow sheets shall include process temperatures and pressures into and out of major units.
- The applicant shall provide a detailed discussion of the need or problem the technology will address and the major issues and key risks in the development of the proposed technology.

The applicant shall also provide a detailed discussion to validate that the proposed technology is technically superior to other currently available technologies.

- The applicant shall provide a proposed work plan and schedule and include milestones and performance metrics in the work plan to gauge technical progress. The applicant shall provide a PERT (Program Evaluation and Review Technique) chart or equivalent depicting the project schedule, milestones, and interrelationship of the project phases/tasks. The applicant shall identify the critical path which identifies the sequential phases/tasks which, if not completed on time, will result in a delay in the overall project schedule. All significant milestones shall be defined in a milestone log and depicted on the schedule.
- The applicant shall provide a table listing the estimated labor hours and labor categories (e.g., project manager, principal investigator, engineering, technician, scientific, clerical) required for each phase/task. The applicant shall include a table showing labor hours and labor categories for any proposed subcontracting or consulting effort for each phase/task. The applicant shall discuss the rationale used to develop estimates for labor hours, labor categories, subcontracting effort, consulting effort. Cost information is not to be included in the technical proposal volume. The applicant shall explain the purpose of the subcontract or consulting effort.

(2) Understanding the Technology (Criterion 2)

- The applicant shall clearly demonstrate its understanding of the solicitation objectives, the technology issues facing successful commercialization of the proposed concepts, and the needs for the proposed research. The offeror shall discuss the potential benefits, advantages, and improvements offered by its proposed concept.
- The applicant shall provide a list of operational issues and a plan for the resolution of these issues. Resolution of these issues may take the form of an experimental and/or modeling program. It is recognized that complete resolution of some issues can only be done in the testing phase.

(3) Capability/Organization (Criterion 3)

- The applicant shall provide a detailed discussion of current corporate experience and success in similar projects resulting in successful technology development and commercialization.
- The applicant shall discuss its role as either a commercial producer of the systems major component(s), or as a teaming arrangement with commercial producers of the systems major component(s) (i.e., defined as power-producing units such as fuel cells, turbines, etc.).
- The applicant shall provide a detailed discussion of experience and availability of key personnel to complete the proposed project. Relative to the nature and time scale of the proposed project, team capabilities shall be evaluated for both technical expertise and product commercialization expertise. The applicant shall provide an organization chart which clearly delineates all members of the proposed team, with clear lines of authority identified.
- The applicant shall provide a detailed discussion of adequacy (quality, availability and appropriateness) of facilities and equipment to accommodate the proposed project. Evidence of the applicant's commercial production of the major components of the proposed system or inclusion of a commercial producer(s) of the major components (i.e., defined as power producing units such as fuel cells, turbines, etc.) of the proposed system shall also be provided. The applicant shall also include a discussion regarding prior corporate commercialization of similar technologies.

(4) Business Management Plan (Criterion 4)

- The applicant shall provide a detailed discussion on the completeness, practicality, and adequacy of the commercialization strategy to achieve significant market penetration of the proposed “Hybrid Power Systems” technology including the adequacy of intellectual property rights and/or institutional alliances to execute the commercialization strategy. As part of the commercialization strategy, the applicant shall provide a commercialization schedule, depicting key milestones, with a clear path to commercialization of the technology by the year 2010 or sooner.
- The applicant shall provide a detailed discussion of the viability and practicality of the proposed technology to meet the needs of the target market in a cost effective manner without major market restructuring considering potential technical, regulatory, economic, environmental, production or other issues impacting market success.
- The applicant shall provide a detailed discussion of the corporate commitment to fulfill the proposed project objectives. (This may include cost sharing exceeding the minimum requirements.).

6.10 STATEMENT OF PROJECT OBJECTIVES INSTRUCTIONS (DEC 1999)

All applications must contain a single, detailed Statement of Project Objectives that addresses how the project objectives will be met. The Statement of Project Objectives must contain a clear, concise description of all activities to be completed during project performance and follow the structure discussed below. Applicants shall prepare the Statement of Project Objectives in the following format:

TITLE OF WORK TO BE PERFORMED

(Insert title of work to be performed. Be concise and descriptive.)

A. OBJECTIVES

Include one paragraph on the overall objective(s) of the work. Also, include objective(s) for each phase of the work.

B. SCOPE OF WORK

This section should not exceed one-half page and should summarize the effort and approach to achieve the objective(s) of the work for each phase.

C. TASKS TO BE PERFORMED

Detailed tasks, concisely written, should be provided in a logical sequence and should be divided into the phases of the project. This section provides a brief summary of the planned approach to this project.

PHASE I

Task 1.0 (Title)

(Description)

Subtask 1.1 (Optional)

(Description)

Task 2.0 - (Title)

PHASE II

Task 3.0 - (Title)

D. DELIVERABLES

The periodic, topical, and final reports shall be submitted in accordance with the attached "Federal Assistance Reporting Checklist" and the instructions accompanying the checklist.

The Recipient shall provide a list of deliverables other than those identified on the "Federal Assistance Reporting Checklist" that will be delivered. These reports shall also be identified within the text of the Statement of Project Objectives.

1. Task 1.1 - (Report Description)
2. Task 2.2 - (Report Description)

E. BRIEFINGS/TECHNICAL PRESENTATIONS (If applicable)

1. The Recipient shall prepare detailed briefings for presentation to the COR at the COR's facility located in either Pittsburgh, PA or Morgantown, WV. Briefings shall be given by the Contractor to explain the plans, progress, and results of the technical effort. The first briefing shall be presented within 30 days after agreement award. Additional briefings shall be presented at least 45 days before a continuation decision point. The final briefing shall be presented at least 45 days before the award is due to expire.

2. The Recipient shall provide and present a technical paper(s) at the DOE/NETL Annual Contractor's Review Meeting to be held at the NETL facility located in either Pittsburgh, PA or Morgantown, WV.

6.11 TECHNICAL EXCEPTIONS AND DEVIATIONS (JULY 1999)

This section shall identify and explain any exceptions or deviations taken or conditional assumptions made with respect to the technical requirements of the solicitation.

Any exceptions taken must contain sufficient amplification and justification to permit evaluation. All benefits to the Government shall be explained for each exception taken. Such exceptions will not, of themselves, automatically cause an application to be termed unacceptable. However, a large number of exceptions, or one or more significant exceptions not providing benefit to the Government may result in rejection of the application(s) as unacceptable.

SECTION VII -- EVALUATION AND SELECTION

7.1 INTRODUCTION (DEC 1999)

This section contains the evaluation approach, as well as, the individual criteria to be used in the evaluation of applications.

7.2 GENERAL (JULY 1999)

It is the policy of DOE that any financial assistance be awarded through a merit-based selection process which means a thorough, consistent and independent examination of applications based on pre-established criteria by persons knowledgeable in the field of the proposed project.

7.3 PRELIMINARY EVALUATION (AUG 1999)

Prior to a comprehensive evaluation, applications will undergo an initial review to determine whether the information required by the solicitation has been submitted and is properly completed. Applications will be reviewed for relevance to the "Hybrid Power Systems" program and for responsiveness to the technical requirements of the solicitation. Applications that require cost-sharing will be reviewed to insure that this requirement has been met. Volume I of the application will be reviewed to assess the Applicant's eligibility under the lobbying, EPAct and Simpson-Craig Amendment requirements. Failure to successfully meet any one of these Preliminary Evaluation criteria will result in the elimination of the application and no further consideration in the Comprehensive Evaluation. In the event that an application is eliminated, a notice will be sent to the Applicant stating the reason(s) that the application will not be considered for financial assistance under this solicitation.

7.4 COMPREHENSIVE EVALUATION (AUG 1999)

Applications passing the preliminary evaluation shall be subject to a comprehensive evaluation in accordance with the technical evaluation criteria listed in this section.

The technical evaluation is conducted to determine the merits of the technical application with regard to the potential success of the project as well as future commercial applications. Comprehensive evaluation results in a numerical score for each application against each of the technical evaluation criteria.

The Environmental, Health, Safety, and Security (EHSS) Evaluation, which is not point scored, is conducted to determine the completeness of the Environmental Questionnaire, and to assess the applicant's awareness of EHSS requirements for mitigating project related EHSS risks and impacts.

The cost evaluation, which is not point scored, is conducted to determine the completeness of the cost estimate, appropriateness and reasonableness of the cost, and to assess the applicant's understanding of the Statement of Project Objectives.

7.5 TECHNICAL EVALUATION CRITERIA (AUG 1999)

Technical applications submitted in response to this solicitation will be evaluated and scored in accordance with the criteria listed below:

Criterion 1: Technical Approach

- Applications will be evaluated on the appropriateness and soundness of the proposed technical approach to effectively accomplish the project objectives. and shall discuss the overall technical feasibility of the approach. Applications will also be evaluated on the feasibility of the proposed technology, the scientific merit (based on sound scientific and engineering

principles), and the degree to future success in the marketplace of the technology.

- Applications will be evaluated on the adequacy of the discussion of the need or problem the technology will address and the major issues and key risks in the development of the proposed technology. Applications will be evaluated on the evidence presented that the proposed technology is technically superior to other currently available technologies.
- Applications will be evaluated on the clarity, completeness, and feasibility of the proposed work plan and schedule and on the appropriateness of milestones and performance metrics in the work plan for gauging technical progress.
- Applications will be evaluated on the reasonableness of proposed labor hours, labor categories, travel, consultants, and subcontractors as they apply to the performance of the proposed project.

Criterion 2: Understanding of the Technology

- Applications will be evaluated on the completeness and conciseness of the discussion and evidence of the Applicant's knowledge and understanding of the solicitation objectives, the technology issues facing successful commercialization of the proposed concepts, and the needs for the proposed research. Applications will also be evaluated on the potential benefits, advantages, and improvements offered by its proposed concept.
- Applications will be evaluated on the appropriateness and soundness of the Applicant's understanding of the proposed list of operational issues and their soundness and quality for resolution of these issues.

Criterion 3: Capability/Organization

- Applications will be evaluated on the demonstrated current corporate experience and success in similar projects resulting in successful technology development and commercialization.
- Applications will be evaluated on the corporate experience and success as a commercial producer of the systems major component(s), or as a teaming arrangement with commercial producers of the systems major component(s) (i.e., defined as power-producing units such as fuel cells, turbines, etc.).
- Applications will be evaluated on the experience and availability of key personnel to complete the proposed project. Relative to the nature and time scale of the proposed project, team capabilities will be evaluated for both technical expertise and product commercialization expertise.
- Applications will be evaluated on the adequacy (quality, availability, and appropriateness) of facilities and equipment to accommodate the proposed project.

Criterion 4: Business Management Plan

- Applications will be evaluated on the completeness, practicality, and adequacy of the commercialization strategy to achieve significant market penetration of the proposed "Hybrid Power Systems" technology including the adequacy of

intellectual property rights and/or institutional alliances to execute the commercialization strategy.

- Applications will be evaluated on the viability and practicality of the proposed technology to meet the needs of the target market in a cost effective manner without major market restructuring considering potential technical, regulatory, economic, environmental, production or other issues impacting market success.
- Applications will be evaluated on the demonstration of corporate commitment to fulfill the proposed project objectives. (This may include cost sharing exceeding the minimum requirements.).

7.6 ENVIRONMENTAL HEALTH SAFETY AND SECURITY EVALUATION CRITERIA

The Environmental Questionnaire will be evaluated in order to: determine adequacy and completeness of furnished data, assess the applicant's awareness of project related requirements, including mitigating any project related risks and impacts.

7.7 COST EVALUATION CRITERIA (JULY 1999)

The costs proposed will be evaluated in response to this solicitation in order to:

- (a) Determine the level of verifiable cost sharing;
- (b) Ensure that all work elements included in the Statement of Project Objectives have associated costs, and that those cost appear appropriate and reasonable for the effort proposed; and
- (c) Assess the applicant's understanding of the Statement of Project Objectives.

7.8 RELATIVE ORDER OF IMPORTANCE OF EVALUATION CRITERIA (JULY 1999)

The evaluation of the technical application will be conducted using preestablished weights to determine the relative merits of the application in accordance with the technical evaluation criteria. The technical evaluation (Volume II - Technical Application) represents 100% of the total evaluation scoring. Although Volume I - Business and Financial Application will not be point scored it will be considered in the selection decision and must be addressed.

The following weighting factors will be applied to each technical evaluation criteria to obtain a final evaluation rating for each application.

1. Technical Approach 40%
2. Understanding of the Technology 30%
3. Capability/Organization 20%
4. Business Management Plan 10%

7.9 APPLICATION OF PROGRAM POLICY FACTORS (JULY 1999)

Program policy factors are those factors that are not indicative of the applicant's individual merit, but are relevant and essential to the process of choosing which application(s) will best achieve the program objectives. Such factors are often beyond the control of the Applicant. Applicants should recognize that some very good applications may not receive an award because they do not fit within a mix of projects which maximizes the probability of achieving the DOE's overall research and development objectives. Therefore, the following Program Policy Factors may be used by the Source Selection Official to assist in determining which of the ranked application(s) shall receive DOE funding support.

1. It is desirable to select for award a group of projects which represents a diversity of technical approaches and methods;
2. It may be desirable to support complementary and/or duplicative efforts or projects, which, when taken together, will best achieve the research goals and objectives;
3. It is desirable, because of the nature of the energy source, the type of projects envisioned, or limitations of past efforts, to select for award a group of projects with a broad or specific geographic distribution.

The above factors will be independently considered by the Source Selection Official in determining the optimum mix of applications that will be selected for support. These policy factors will provide the Source Selection Official with the capability of developing, from the competitive solicitation, a broad involvement of organizations and organizational ideas, which both enhance the overall technology research effort and upgrade the program content to meet the goals of the DOE.

7.10 BASIS FOR SELECTION AND AWARD (AUG 1999)

In selecting applications for award, DOE shall consider the evaluation criteria and the Program Policy Factors set forth in the solicitation to arrive at the best mix of projects that achieve the solicitation program objectives. DOE reserves the right to select all or a portion of an application that meets these objectives.

SECTION VIII -- INTENTION TO PROPOSE FORM

INTENTION TO PROPOSE

Solicitation Number: DE-PS26-00NT40779

_____ We do intend to submit an application.

Proposed Title of Project: _____

_____ We do not intend to submit an application for the following reasons:

Name and Address of Firm or Organization (Include Zip Code):

Typed or Printed Name and Title: _____

Date: _____

NOTE: Please indicate your intention to propose no later than 3:00 p.m. on May 31, 2000, by electronically sending this form to the following address: kelly.mcdonald@netl.doe.gov. No other solicitation material should be returned if you do not intend to submit an application.

SECTION IX -- REFERENCES

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